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Instruction manula - upgrade

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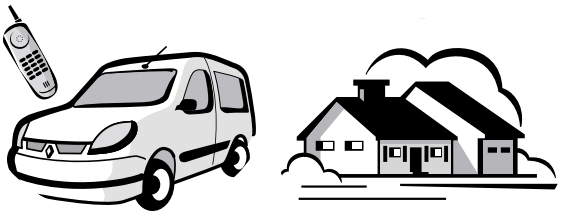
news in program 3.3

for



ATMOS ACD 01

ATMOS

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1 Document Revision

This Service Manual was updated on February 1, 2011.

2 Software Version

ACD01 v3.0 to v3.3 Software Upgrade Manual

3 Basic Description

This document describes upgrade of software 3.0 to the new version 3.3 due to:

- Extension of boiler types – a combination of a solid fuel boiler and an automatic boiler
- Extension with automatic switching after burning out of the solid fuel boiler to the automatic boiler
- Extension of the boiler functions with the option of pellet operation with an exhaust fan of combined boiler
- Extension of safety functions for flue gas extraction from the boiler after burner shutdown
- Extension of safety functions of the controller in case of a power supply failure
- Extension of functions of control elements
- Extension of menus and related parameters
- Extension of wiring diagrams of heating systems with solar heating
- Extension of EDHW electric heating
- Extension of DHW heating in the summer period
- Extension of the electric heating functions of the EHP accumulation tank
- Extension of functions of accumulation tank charging with an automatic pellet boiler
- Extension of wiring diagrams of heating systems with a TP air-conditioning (cooling) unit
- Extension with dynamic protection of flow temperature to the heating circuit
- Extension of parameter settings of return temperature control with a mixing valve
- Extension of heating system information in the information protocol of the BUS system
- Adaptation of the translation of expressions in the information system

CAUTION The document only summarizes individual additional information about the UPGRADE of SOFTWARE 3.0 to 3.3 and does not serve as a complete INSTALLATION MANUAL; it is only an informative document about implemented changes as compared to v3.0.
To install an ACD01 controller with v3.3 you should use the separate document SERVICE AND INSTALLATION MANUAL v3.3

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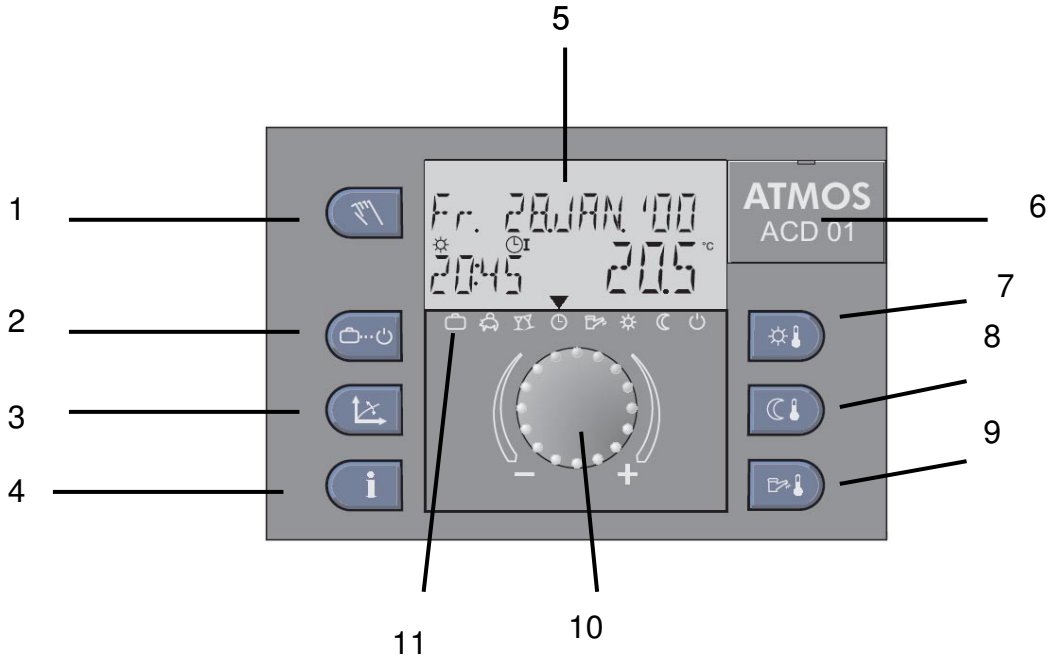
4 Control Elements



1 “Manual source selection / Fan control” key
2 “Operation mode” key (basic display)
3 “Heating characteristics” key
4 “Information” key
5 Display
6 Cover for the connection of the service programmer
7 “Daytime room temperature” key
8 “Night-time room temperature” key
9 “HDW temperature” key
10 Rotary button
11 Symbols of operation modes

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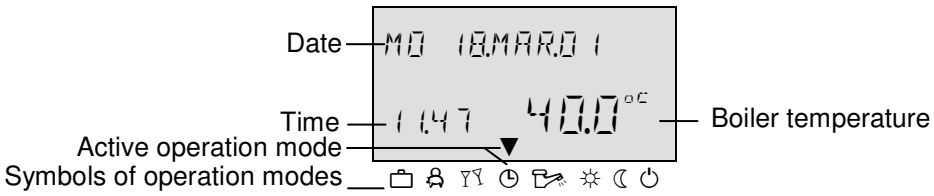
4.1 Basic displays of the controller

The display modes depend on the selected boiler type or hydraulic diagram.

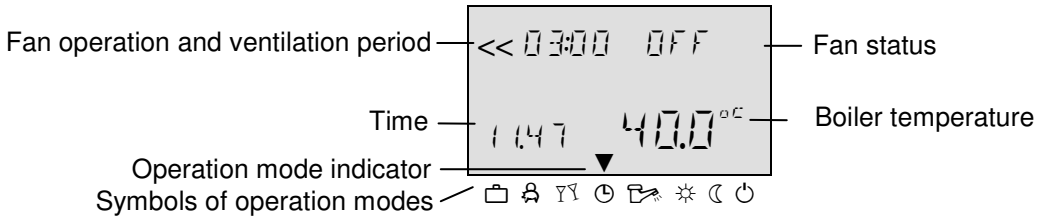
Display 1 - hydraulic diagrams 1, 3, 4, 9, 10, 12 (boiler type 1, 2 and 3)

The display shows the date, time and temperature of the heat source (boiler)



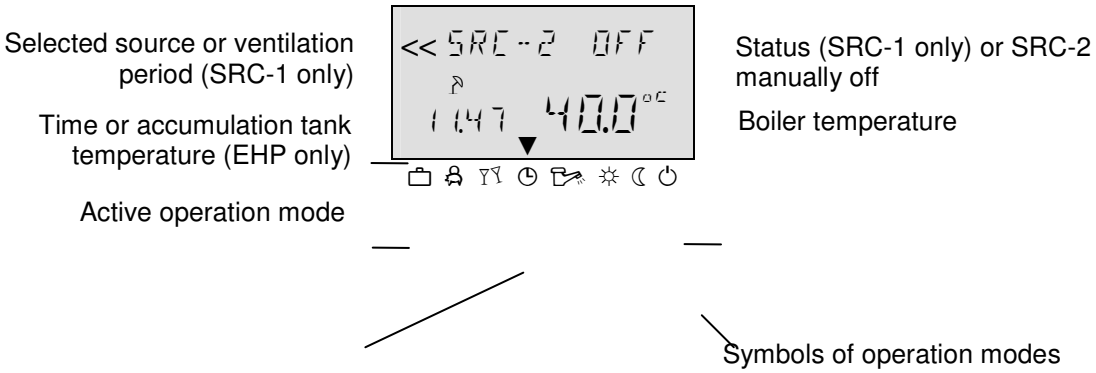
Display 2 – hydraulic diagram 17, 19, 20 (boiler type 4)

The display shows fan operation, fan ventilation period, fan status, the time and the temperature of the heat source (boiler).



Display 3 – combined source - type no. 5 and 6

The display shows the selected source, fan ventilation period and fan status (SRC-1 only), temperature of the source.



The **parasol** symbol indicates the summer mode of the controller.

The **snowflake** symbol ❄ indicates active anti-freeze protection.

4.1.1 Fan / Source selection key

The “Fan mode - Ventilation period” key is used to control the boiler fan if the boiler type 4, 5 or 6 has been defined (in the case of the combined types 5 and 6 it is only valid for SOURCE-1)

The fan controls the operation of the boiler with regard to the water and flue gas temperature. The way of control differs depending on the fan type (pressure or exhaust), i.e. the exhaust fan is left on during the opening of the boiler door while the pressure fan must be switched off by pressing of the key before the opening of the door. The fan type, switch-off temperature, differential, etc. is set by the INSTALLER within the definition of parameters; the default fan type is exhaust.

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In the case of an exhaust fan manual operation is only used during the start-up or cleaning of the boiler; during normal boiler operation the fan is switched off when the operation temperature is achieved, i.e. its operation is completely automatic and is controlled by the controller. If it is necessary to start the fan in case the operation temperature has been achieved, by pressing the key you will activate the ventilation period, which is indicated on the display by counting down of the configured period to 00:00; if the boiler achieves the critical temperature, the fan will be switched off in a forced way.

The operation of a pressure fan only differs from the exhaust one in that it must be switched off before the opening of the door (by pressing the key). Again, the display will show the count-down of the ventilation period and after its expiration the display will return to the normal automatic mode.

During the start-up of the boiler, i.e. when the flue gas temperature is below the minimum value, after the expiration of the ventilation period a 60-minut switched-on fan period is automatically activated to support burning up of the boiler.

Priorities for the fan running time:

- Priority 1: Safety function - the fan is always switched off at the critical temperature of the boiler
- Priority 2: Manual fan control - during the start-up, operation or cleaning of the boiler
- Priority 3: Automatic mode - during boiler operation

4.1.1.1 Function 1 - boiler fan control (boiler type 4, 5 and 6)

Boiler out

[TWO arrows flash on the display]

- Waiting for pressing of the key
- The flue gas temperature is below the minimum value (boiler out)

Boiler start … press the key.

[TWO arrows on the display are permanently displayed]

- Count-down of the ventilation period Ta
- Press the key to stop the timer and the fan.

Normal boiler operation … (if necessary, press the key to switch off the pressure fan).

[ONE arrow - Tb= 60min for burning up, active after the start,

TWO arrows = normal operation]

- Waiting for pressing of the key
- The flue gas temperature is above the minimum value (boiler on)

Note: If you inadvertently press the key, you may reactivate the operation of the fan by pressing the key once again.

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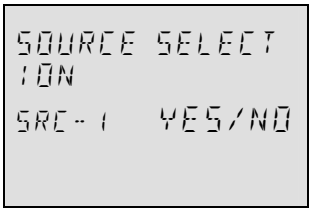
4.1.2 Function 2 – manual switching of SRC-1 and SRC-2 sources (boiler type 5 and 6 only

By keeping the key pressed for more than 3 seconds you will activate the menu for SOURCE selection in accordance with the pre-defined boiler type 5 or 6. Turn the button to select between the SRC-1 and SRC-2 sources (you can assign your own names to the sources in the SOURCES menu). Press to confirm your selection by YES/NO (protection from wrong selection).

4.1.2.1 Indications on the display



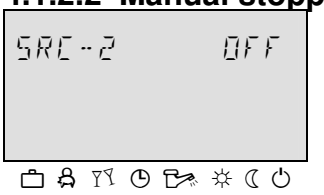
When the key is kept pressed for > 3 sec., the source selection, i.e. the boiler type selection menu will appear. Select the source by turning and confirm your selection by pressing .

Boiler type no. 5 – you can make your selection between SRC-1 (controlled solid fuel boiler no. 4) and SRC-2 (controlled automatic boiler without an accumulation tank - type no. 2).

Boiler type no. 6 – you can make your selection between SRC-1 (controlled solid fuel boiler no. 4) and SRC-2 (controlled automatic boiler with an accumulation tank - type no. 3).

Switching between the SRC-1 and SRC-2 sources is subject to the current status of the boiler, i.e. whether it is on or not, which is monitored through the flue gas temperature (AGF), i.e. you can only switch over to the selected source after burning out (drop below AGFmin). If the flue gas temperature is still high, the boiler type is indicated by the flashing text of the selected source. After switching over to the selected source the display will correspond to the particular boiler type, see **Chyba! Nenalezen zdroj odkazů.**.

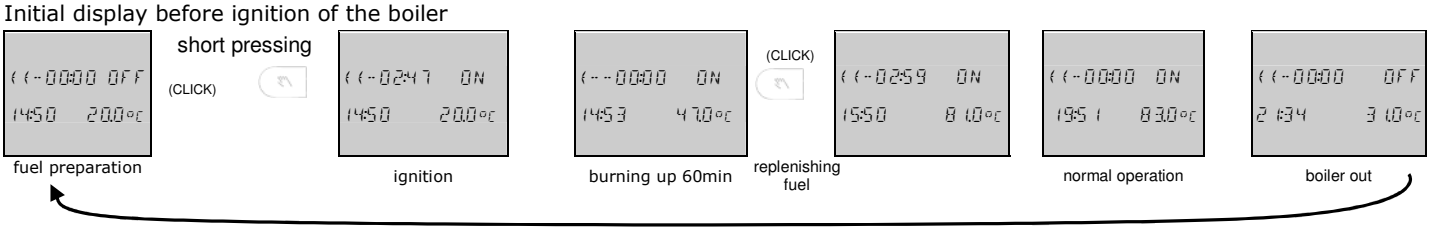
4.1.2.2 Manual stopping of the automatic heat source (SRC-2)



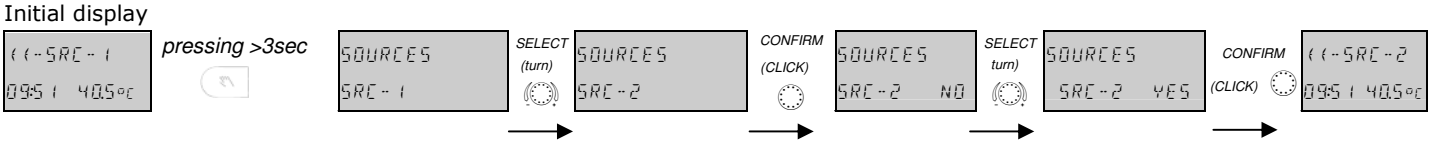
When the automatic source (SRC-2) is selected, after short pressing of the key the selection of release (ON) or prohibition (OFF) of its operation will be displayed. You can make your selection by turning and confirm it by pressing .

4.1.3 Example of navigation in the menu

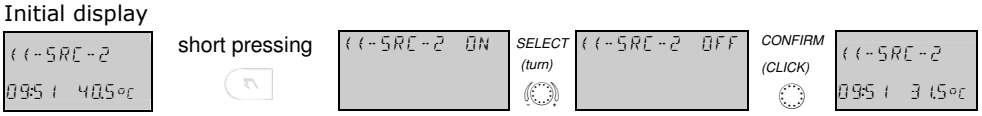
Boiler fan control (boiler type 4, 5 and 6)



Manual switching between sources (boiler types no. 5, 6)



Manual stopping of the automatic source (boiler types no. 5, 6)



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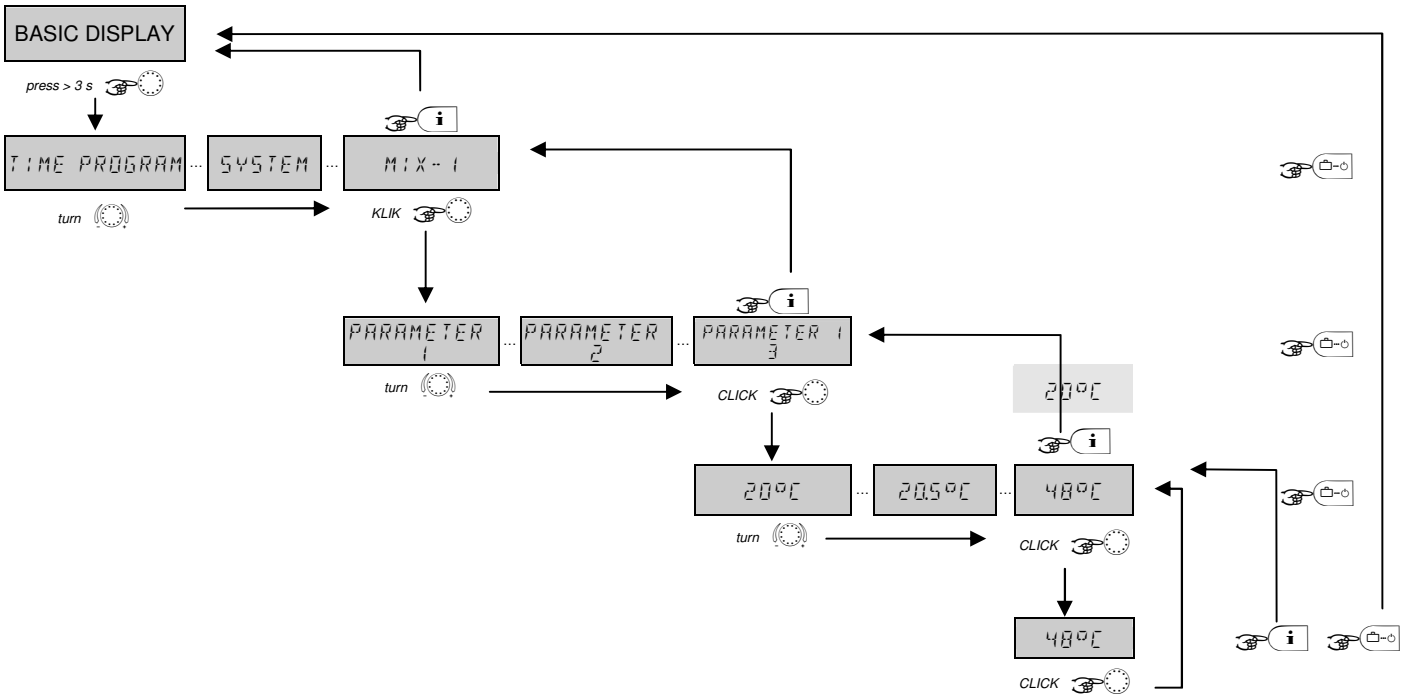
5 Controller Parameters Menu

The ATMOS ACD01 equithermal controller features menus that contain values of parameters for setting and functions of the controller. The parameters are defined in different units or expressions belonging to specific functions. As protection from wrong setting some parameters or menus are hidden and are only displayed for the higher access level.

5.1 Entering the menu

- To enter the menu you must keep the rotary button pressed for > 3 s.
- The first parameter menu that is displayed is the menu of time programs; you can select all the other menus by turning the button
- To enter the required menu, to enter parameter editing and to confirm the parameter value press the rotary button.
- To move in the opposite direction, i.e. one level back, press the info key. Similarly, in case of inadvertent entering of a parameter or an incorrect value after pressing of the info key the parameter value will remain in the original condition.
- The current position in the menu is indicated by flashing, i.e. if the menu name flashes = the current position is menu selection, if the parameter number flashes = the current position is parameter selection, if the parameter value flashes, the current position is editing the parameter value.
- You can return from the menu to the basic display by pressing the key.

5.1.1 Example of navigation in the menu



5.2 Entering the coded menu access level (TECHNICIAN/OEM)

By entering the access code you will unlock parameters or information of the corresponding level.

Code input: Simultaneously press the and keys for more than 3 sec. to display the request for the four-digit code.

ACCESS CODE 0000

Use the rotary button to gradually set the digits from the first to the last flashing digit to the required value (the first digit will start flashing first, then, after confirmation the second digit will flash, etc.)

5.3 Overview of menus of the ACD01 controller

	Programs		Configuration		Parameter setting									Service functions		
Para-meter	Date	Time programs	Hydraulic	System	DHW	MIX.VALVE 1	MIX.VALVE 2	Solar	Solid fuel	Sources	Return control	Buffer	BUS	Relay test	Alarms	Sensor calibration
1	Time	MC1	Hydraulic diagram	Language	DHW night	RED / LIMITED MODE	RED / LIMITED MODE	Switch on differential	Boiler type	Automatic switch-over from SRC-1	Temperatur e	Min. temperature	Controller address	Boiler	Alarm 1	Outdoor sensor
2	Year	MC 2	DHW	P1 / P1-P3	Legionella protection	Heat. system exponent	Heat. system exponent	Switch off differential	Operation temp.		RLP diff.	Max. temperature	Access level SDW20 MC1	Boiler exhaust flap	Alarm 2	Boiler sensor
3	Day-month	DHW	Output MC 1	Control MODE	Time for leg. protection	SDW mode	SDW mode	Min. solar pump running time	Critical temp.		RLP extended running time	Increase of SET-POINT of the source	Access level SDW20 MC2	Boiler pump	Alarm 3	DHW sensor
4	Time change	Default time	Output MC 2	Summer	Temp. for leg. protection	SDW room factor	SDW room factor		Boiler pump ON			Res. switching differential		Pump MC 1	Alarm 4	MC 1 sensor
5		Copy circuit	Boiler pump (FIX)	Frost protection temperature	DHW measurement type	Curve adaptation	Curve adaptation	Max. tank temp.	Boiler pump differential			Forced losses		Drive MC 1	Alarm 5	MC 2 sensor
6			Variable output 1	Contact for VI1	DHW max. temperature limit	Optimization time	Optimization time	Solar operation mode	Burner differential			Switch-on differential		Pump MC 2	Alarm 6	SOLAR sensor
7			Variable output 2	Contact for VI2	DHW operation mode	Heating limit	Heating limit	Heater switch off	Fan differential			Switch-off differential		Drive MC 2	Alarm 7	Buffer sensor
8			Variable input 1	Contact for VI3	Tank discharge protection	Room frost protection temp.	Room frost protection temp.	Priority / parallel difference	Fan type	Summer heating of DHW		Filling protection		DHW pump	Alarm 8	Input sensor 1 (VI1)
9			Variable input 2	Climatic zone	Source SET-POINT increase	Room thermostat function	Room thermostat function	Heat balance	Fan period	Daytime/ST BY EHP		Draining protection		Variable output VO1	Alarm 9	Input sensor 2 (VI2)
10			Variable input 3	Building type	DHW pump switching difference	AF2 assignment	AF2 assignment	Balance restoration	Critical flue gas temp.	Summer EHP		Operation mode		Variable output VO2	Alarm 10	Input sensor 3 (VI3)
11			Indirect return control	Automatic return time	Extended pump running time	Constant temp. value	Constant temp. value	Volume flow	Exhaust flap temp.	EHP start delay		Res. pump running time			Alarm 10	
12				Anti-blocking protection	DHW circulation time programs	Min. circuit temp.	Min. circuit temp.	Fluid density	Exhaust flap differential	Name of SRC-1					Alarm 12	
13				Logical alarms	Circulation pump pulse length	Max. circuit temp.	Max. circuit temp.	Heat capacity of fluid		Name of SRC-2					Alarm 13	
14				Automatic setting functions	Circulation period	Source SET-POINT increase	Source SET-POINT increase		Heating circuit ON			Res. loading temp.			Alarm 14	
15				Installer password		Extended pump running time	Extended pump running time	Test rinse	Circuit switching differential			Boiler pump switch-off differential			Alarm 15	
16						Drying function	Drying function	Switching temp.	Forced losses			Boiler pump switch-on differential			Alarm 16	
17						Max. RL1 temperature	Max. RL2 temperature		Boiler pump control type						Alarm 17	
18				Enabling temperature cycles		Proportional band	Proportional band		Min. flue gas temp.						Alarm 18	
19				Frost protection					Boiler switch-off type						Alarm 19	

20						Integral time	Integral time		Boiler pump start protection						Alarm 20	
21				Time correction		Servo time	Servo time		Fan with burner						RESET	
22						Servo end position	Servo end position		Summer heating of DHW							
23				End user password		P-band of SDW20	P-band of SDW20		RESET of operation hours							
24						I-band of SDW20	I-band of SDW20									
25					Switch-off diff. of par. 8	Holiday mode	Holiday mode									
26					Switch-on diff. of par. 8	Dynamic VF protection	Dynamic VF protection									
29				Curve without AF												
50						AT cooling activation	AT cooling activation									
51						Max. AT temp.	Max. AT temp.									
52						Required VL temp. at par. 50	Required VL temp. at par. 50									
53						Required VL temp. at par. 51	Required VL temp. at par. 51									
54						Required RT temp. at par. 50	Required RT temp. at par. 50									
55						Required RT temp. at par. 51	Required RT temp. at par. 51								End user	
56						min. cooling limitation	min. cooling limitation								Installer	
				Parameter reset		Name of MIX-1	Name of MIX-2								OEM	

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5.3.1 HYDRAULIC Menu

The Hydraulic menu defines which components are connected to the controller.

5.3.1.1 HYDRAULIC Menu - overview of parameters

Par.	Description	Setting range / Setting values	Default setting	Setting
01	Hydraulic diagram	0001 - 0020	0019	
02	DHW pump output	OFF No function 1 DHW loading pump 4 DHW circulation pump 5 DHW electric heating element 46 Controlled electric heating of the DHW tank	1	
03	Output of mixing circuit 1 (MC1)	OFF No function 2 Direct circuit (pump output only) 3 Mixing circuit 1 (OTC) 6 Mixing circuit 1 (as a constant controller) 7 Mixing circuit 1 (as a fixed value controller) 8 Mixing circuit 1 (as a boiler return controller) 40 Mixing circuit 1 (constant cooling temperature) 45 Electric heating of the accumulation tank	3	
04	Output of mixing circuit 2 (MC2)	Setting scope and assignment as parameter 03	3	
05	Output of heating circuit pump (HC)	Fixed settings	KKPF	KKPF
06	Variable output 1 (zone valve) - VO1	OFF No function 4 DHW circulation pump 5 DHW electric heating element 9 Boiler pump 10 Charging pump 11 Pump of boiler circuit 1 12 Pump of boiler circuit 2 13 General alarm output 15 Solar heating charging pump 16 Zone valve of the boiler circuit 19 Solar charging switch 20 Forced solar system losses 21 Parallel heating enabled 26 Main pump 27 Hydraulic buffer support 41 Heating/cooling switch 45 Electric heating of the accumulation tank 46 Controlled electric heating of the DHW tank	OFF	
07	Variable output 2 - VO2	Setting scope and assignment as parameter 06	OFF	
8	Variable input 1 – VI1	OFF No function 1 Outdoor sensor 2 2 Boiler sensor 2 3 DHW tank sensor 2 4 Tank buffer sensor 2 5 Switching contact 6 External alarm input 7 Return sensor for mixing circuit 1 8 Return sensor for mixing circuit 2 9 Return sensor for bypass pump 10 External heating disconnection 11 External modem switching 12 External information 13 Common flow sensor 14 Solar panel return sensor 16 Flue gas sensor 18 Solid fuel tank buffer sensor 19 Tank buffer sensor 1	16	
09	Variable input 2 – VI2	Setting scope and assignment as par. 08	OFF	
10	Variable input 3 – VI3	Setting scope and assignment as par. 08	19	
11	Indirect return check via mixing circuit	OFF, ON	OFF	

GB

5.3.1.2 HYDRAULIC Menu / par.1 – Hydraulic diagram

Function A pre-defined hydraulic diagram is a set of pre-defined parameters (profile) that automatically sets the corresponding parameters to the default values. If a particular application differs from the given hydraulic diagram, the corresponding parameters must be set manually.

After entering of the hydraulic diagram no. the controller is automatically set for the entered boiler type and system type. Hydraulic diagrams differ in the boiler type, way of control and connection of the boiler circuit. The number and type (floor, radiator, etc.) of mixed circuits is defined in the parameters of mixed circuits. A mixed circuit consists of a three-way mixer with a servo motor and circuit pump; a non-mixed (direct) circuit does not contain a three-way mixer and it is only controlled by the circuit pump..

⚠ EXAMPLE E.g. hydraulic circuit no. 12 is entered as value 00 12

⚠ NOTE The default setting is hydraulic diagram no. 19, but if the value has not been changed, the display will show 0000

5.3.1.2.1 Basic overview of hydraulic diagrams

	Without an accum. tank	With an accum tank.	With an accum. tank and zone valve
Uncontrolled boiler (type 1)	**Hydraulic example 1** - Boiler pump controlled by boiler water temperature (WF) - Heating circuits controlled by boiler water temperature (WF)	**Hydraulic example 3** - Boiler pump controlled by boiler (WF) and tank water temperature (PF) - Heating circuits controlled by tank temperature (PF)	**Hydraulic example 4** - Boiler pump and zone valve controlled by boiler (WF) and tank temperatures PF) - Heating circuits controlled by tank temperature (PF)
Controlled automatic boiler (type 2 and 3)	**Hydraulic example 9** - Burner controlled by boiler water temperature (WF) on the basis of system demand - Boiler pump controlled by boiler water temperature (WF) - Heating circuits controlled by boiler water temperature (WF)	**Hydraulic example 10** - Burner controlled by boiler temperatures (WF) and tank top (PF) and bottom (KSPF) temperatures - Boiler pump controlled by boiler (WF) and tank water temperature (PF) - Heating circuits controlled by tank temperature (PF)	**Hydraulic example 12** - Burner controlled by boiler temperatures (WF) and tank top (PF) and bottom (KSPF) temperatures - Boiler pump and zone valve controlled by boiler (WF) and tank temperatures PF) - Heating circuits controlled by tank temperature (PF)
Controlled solid fuel boiler with a flue gas temperature sensor (AGF) (type 4)	**Hydraulic example 17** - Boiler pump controlled by boiler water (WF) and flue gas temperature (AGF) - Heating circuits controlled by boiler water temperature (WF)	**Hydraulic example 19** - Boiler pump controlled by boiler water (WF), flue gas (AGF) and tank temperature (PF) - Heating circuits controlled by tank temperature (PF) - Fan controlled manually by boiler water (WF) and flue gas temperature (AGF)	**Hydraulic example 20** - Boiler pump and zone valve controlled by boiler water (WF), flue gas (AGF) and tank temperature (PF) - Heating circuits controlled by tank temperature (PF) - Fan controlled manually by boiler water (WF) and flue gas temperature (AGF)
Controlled combined solid fuel boiler with a burner and a flue gas temperature sensor (AGF) (type 5 and 6)	**Hydraulic example 31** - Combination of boiler 2 and 4 - boiler pump and heating circuits controlled by water (WF) and flue gas temperature (AGF)	**Hydraulic example 32** - Combination of boiler 3 and 4 - Boiler pump controlled by boiler water (WF), flue gas (AGF) and tank temperature (PF) - Heating circuits controlled by tank temperature (PF)	**Hydraulic example 33** - Combination of boiler 3 and 4 - Boiler pump and zone valve controlled by boiler water (WF), flue gas (AGF) and tank temperature (PF) - Heating circuits controlled by tank temperature (PF)

Note – The variable output VO configured as the zone valve may be used to control any periphery with the same function and control logic (e.g. indication of boiler switch-off, switching another source, etc.).

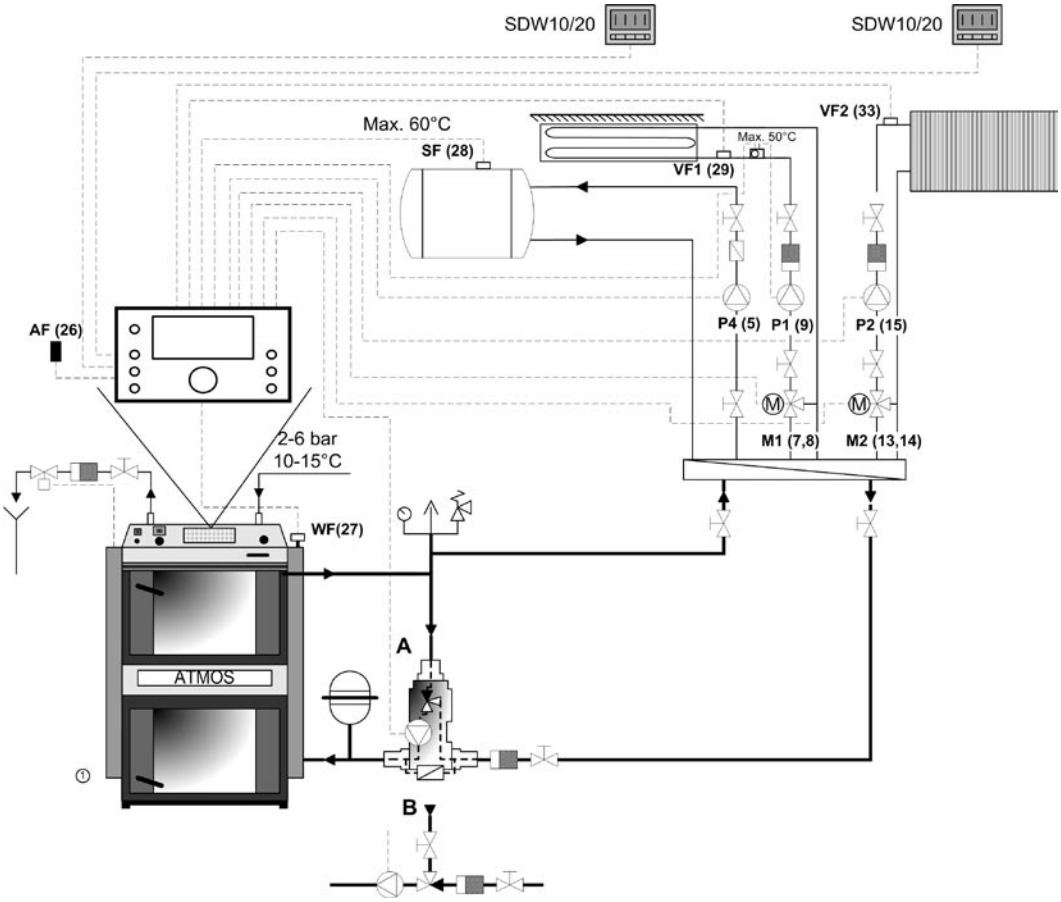
⚠ **CAUTION** **The hydraulic example number is entered as par. no. 1 in the HYDRAULIC menu by the installation technician. If the hydraulic diagram number and the heating system does not correspond to the boiler, the controller cannot control the components properly.**

⚠ NOTE Solar heating can be connected to any hydraulic diagram by defining of Variable Output VO as a solar pump. The manual shows application examples with solar heating. There is no specific hydraulic diagram for solar heating.

GB

5.3.1.2.2 Drawings of hydraulic diagrams

5.3.1.2.2.1 Hydraulic example no. 1 – uncontrolled boiler connected without an accumulation tank



5.3.1.2.2.2 Principle and description of hydraulic diagram no. 0001

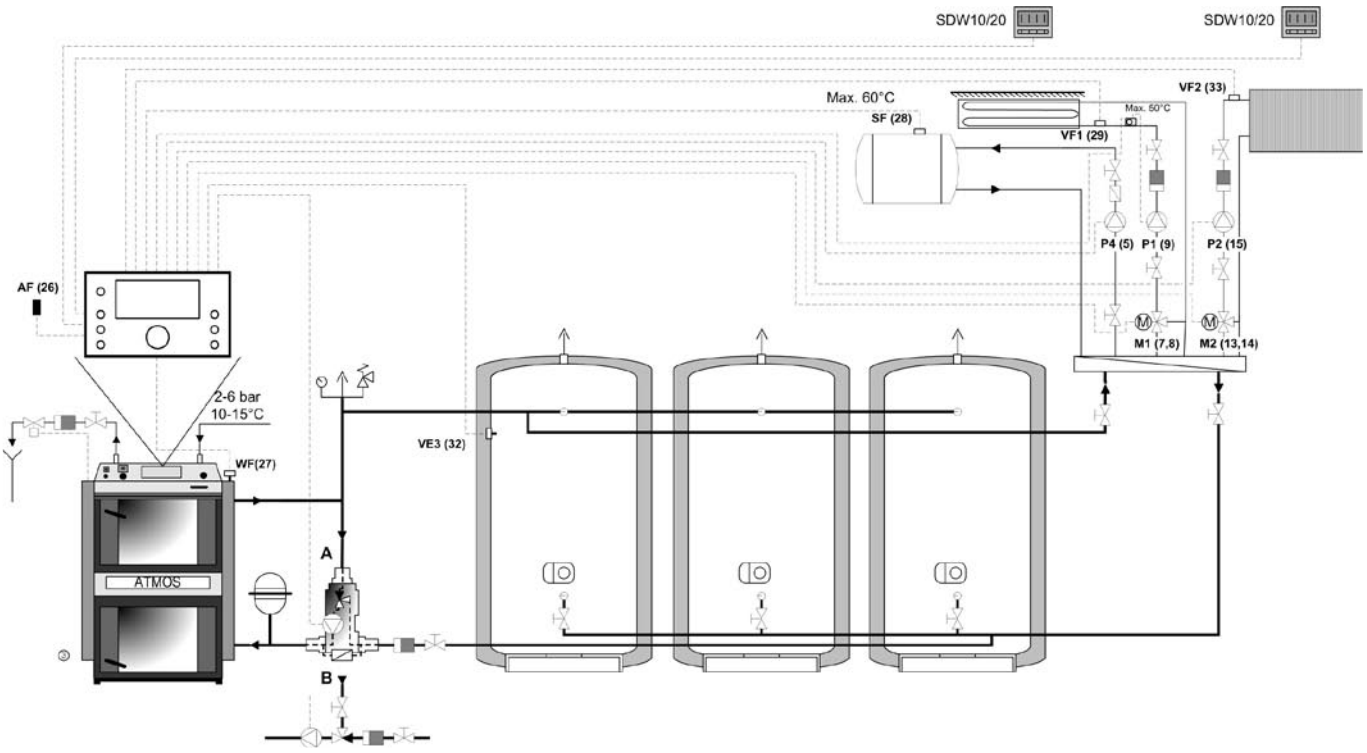
Heat source: Boiler type no. 1 - boiler not controlled by the controller (the boiler has its own control); the controller is only able to protect the boiler from overheating after defining of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).

Boiler pump: The boiler pump (DKP) is switched on the basis of the boiler temperature measured by a WF sensor (see**Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump).

System: With increasing temperature of WF the other connected peripheries (DHW and MIX 1, 2) are further released (see **Chyba! Nenalezen zdroj odkazů.** – Release of heating circuits).

GB

5.3.1.2.2.3 Hydraulic example no. 3 – uncontrolled boiler connected with an accumulation tank



5.3.1.2.2.4 Principle and description of hydraulic diagram no. 0003

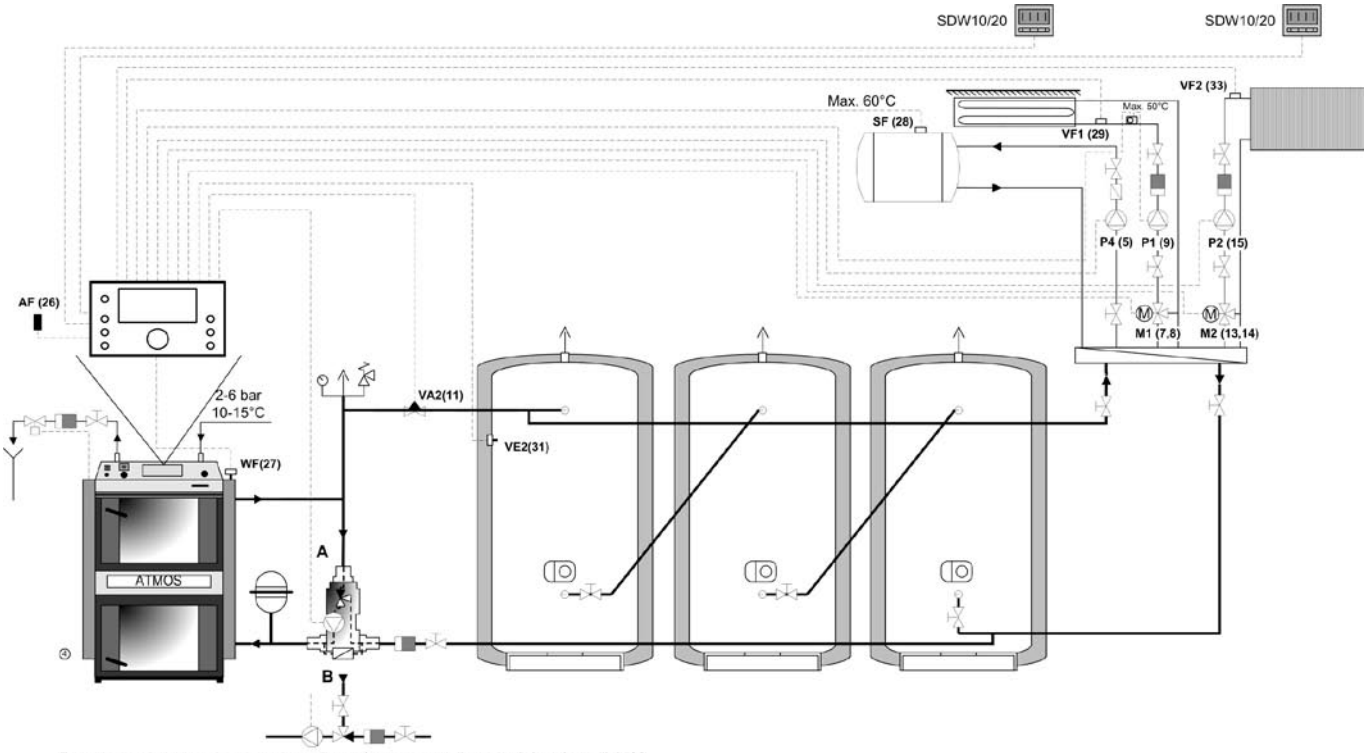
Heat source: Boiler type no. 1 - boiler not controlled by the controller (the boiler has its own control); the controller is only able to protect the boiler from overheating after defining of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).

Boiler pump: If the boiler temperature (WF) is higher than the accumulation tank temperature (PF), the boiler pump (DKP) is started (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump).

System: If the top temperature of the accumulation tank (PF) is higher than PFmin (see 5.3.7.2) the other connected peripheries (DHW and MIX 1, 2) are further released.

NOTE In the case of manual heating with the use of a boiler of type 1 you are recommended to monitor and maintain sufficient temperature in the accumulation tank by charging. The required temperature of the accumulation tank (SET-POINT) is displayed in the Information ⓘ (see **Chyba! Nenalezen zdroj odkazů.**) after pressing of the rotary button on the top temperature of the accumulation tank item.

5.3.1.2.2.5 Hydraulic example no. 4 – uncontrolled boiler connected with an accum. tank via a zone valve



5.3.1.2.2.6 Principle and description of hydraulic diagram no. 0004

Heat source: Boiler type no. 1 - boiler not controlled by the controller (the boiler has its own control); the controller is only able to protect the boiler from overheating after defining of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).

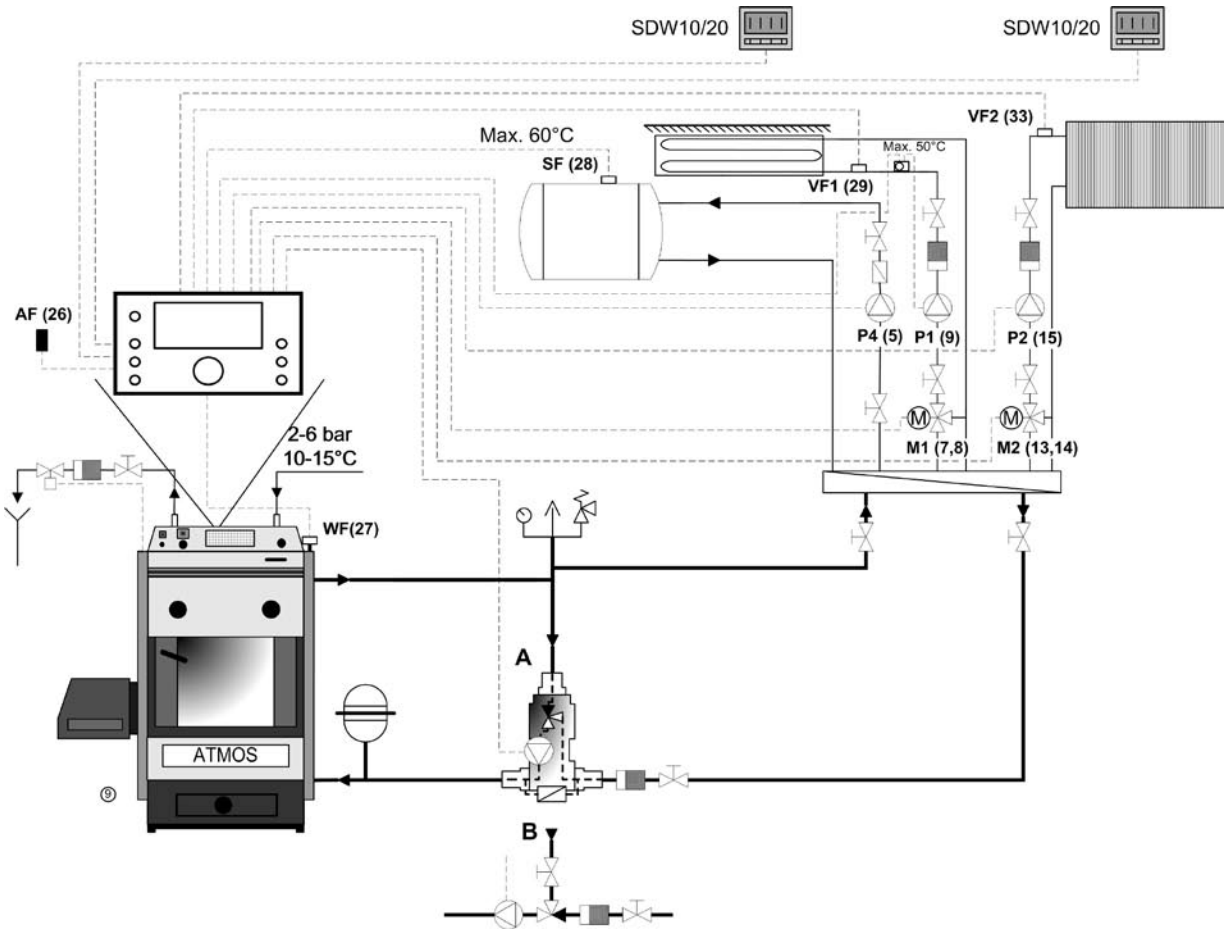
Boiler pump: If the boiler temperature (WF) is higher than the accumulation tank temperature (PF), the boiler pump (DKP) is started (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump) and the zone valve connected to VO2 is opened.

System: If the top temperature of the accumulation tank (PF) is higher than PFmin (see 5.3.7.2), the other connected peripheries (DHW and MIX 1, 2) are further released.

NOTE In the case of manual heating with the use of a boiler of type 1 you are recommended to monitor and maintain sufficient temperature in the accumulation tank. The required temperature of the accumulation tank (SET-POINT) is displayed in the Information (see **Chyba! Nenalezen zdroj odkazů.**) after pressing of the rotary button on the top temperature of the accumulation tank item.

GB

5.3.1.2.2.7 Hydraulic example no. 9 – automatic (pellet) boiler connected without an accumulation tank



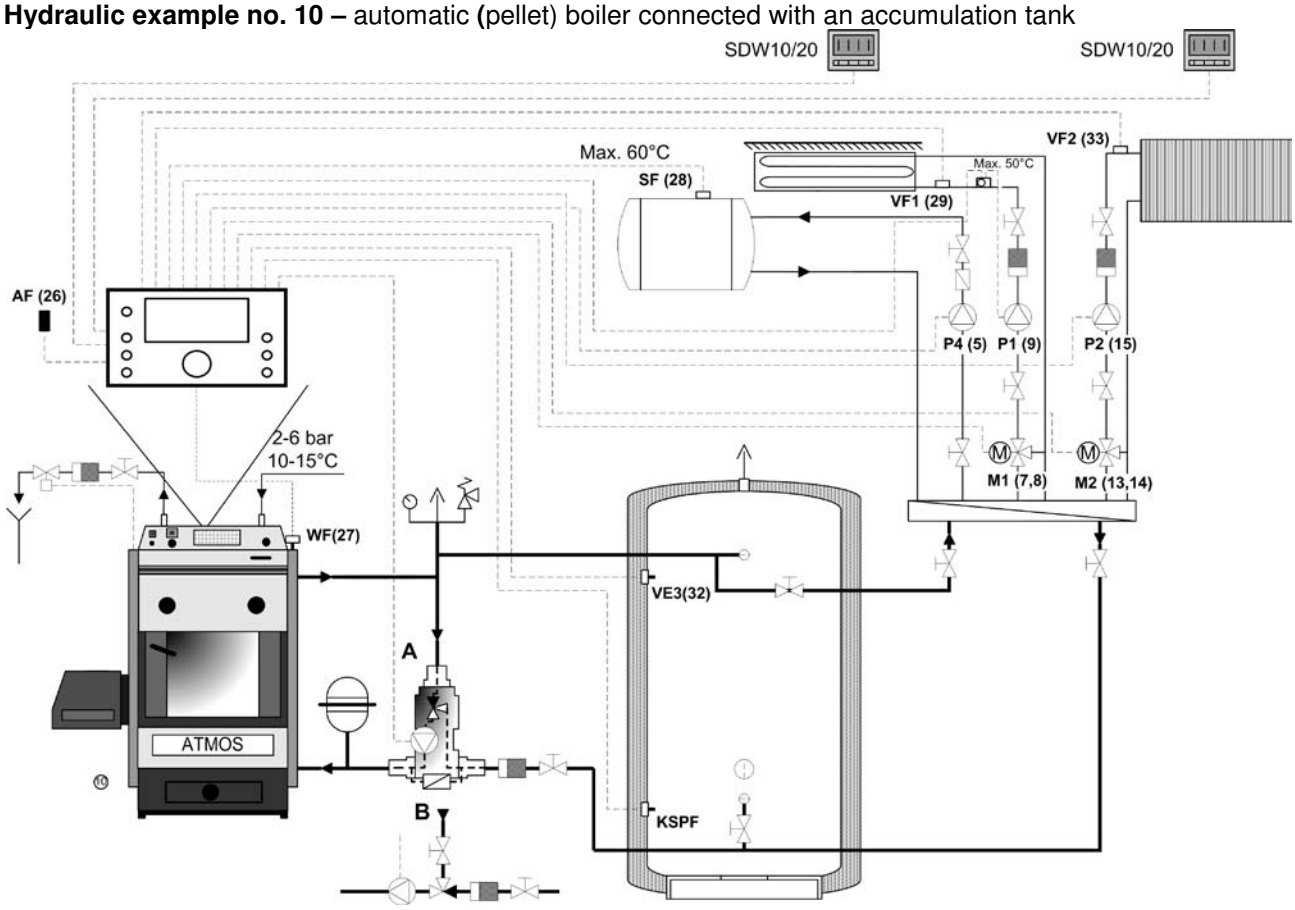
5.3.1.2.2.8 Principle and description of hydraulic diagram no. 0009

Heat source: Boiler type no. 2 - boiler controlled by the controller – the boiler is controlled completely automatically on the basis of the system demand (DHW and MIX 1, 2). When the demand is met, the boiler is switched off.

Boiler pump: The boiler pump (DKP) is started in accordance with the boiler temperature measured by the WF sensor (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump).

System: With increasing temperature of WF the other connected peripheries (DHW and MIX 1, 2) are further released (see **Chyba! Nenalezen zdroj odkazů.** – Release of heating circuits).

5.3.1.2.2.9 Hydraulic example no. 10 – automatic **(**pellet) boiler connected with an accumulation tank



5.3.1.2.2.10 Principle and description of hydraulic diagram no. 0010

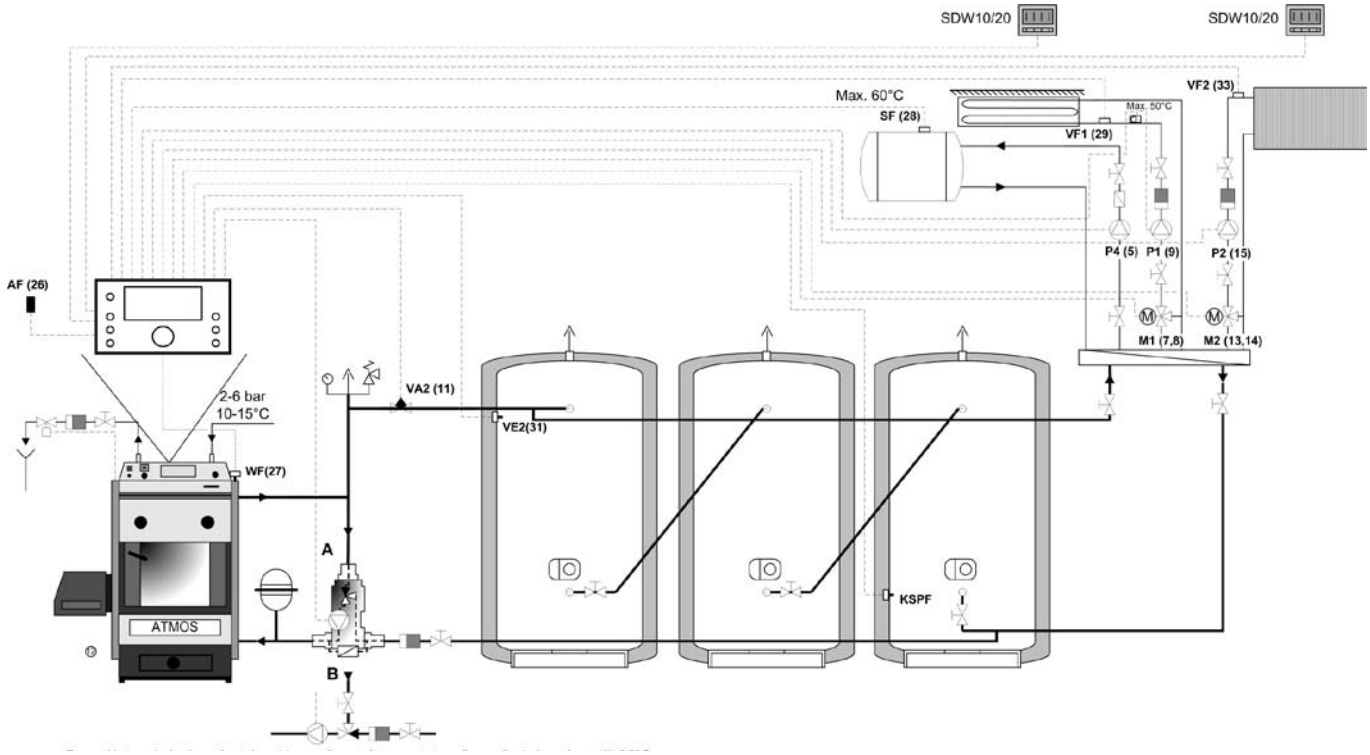
Heat source: Boiler type no. 3 - automatic boiler controlled by the controller – the boiler is controlled completely automatically on the basis of the SET-POINT of the top sensor of the tank (PF) (if the current temperature is lower than the SET-POINT, the boiler is started). When the demand is met as measured by the KSPF sensor, the boiler is switched off.

Boiler pump: If the boiler temperature (WF) is higher than the top temperature of the accumulation tank (PF), the boiler pump (DKP) is started (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump).

System: If the top temperature of the accumulation tank (PF) is higher than PFmin (see 5.3.7.2), the other connected peripheries (HDW and MIX 1, 2) are further released. With its demands the system creates SET-POINT temperatures of the top sensor of the tank (PF). The SET-POINT is displayed in the Information ⓘ (see **Chyba! Nenalezen zdroj odkazů.**) after pressing of the rotary button on the top temperature of the accumulation tank (PF) item - the source for the system is the accumulation tank.

GB

5.3.1.2.2.11 Hydraulic example no. 12 – automatic (pellet) boiler connected with an accum. tank via a zone valve



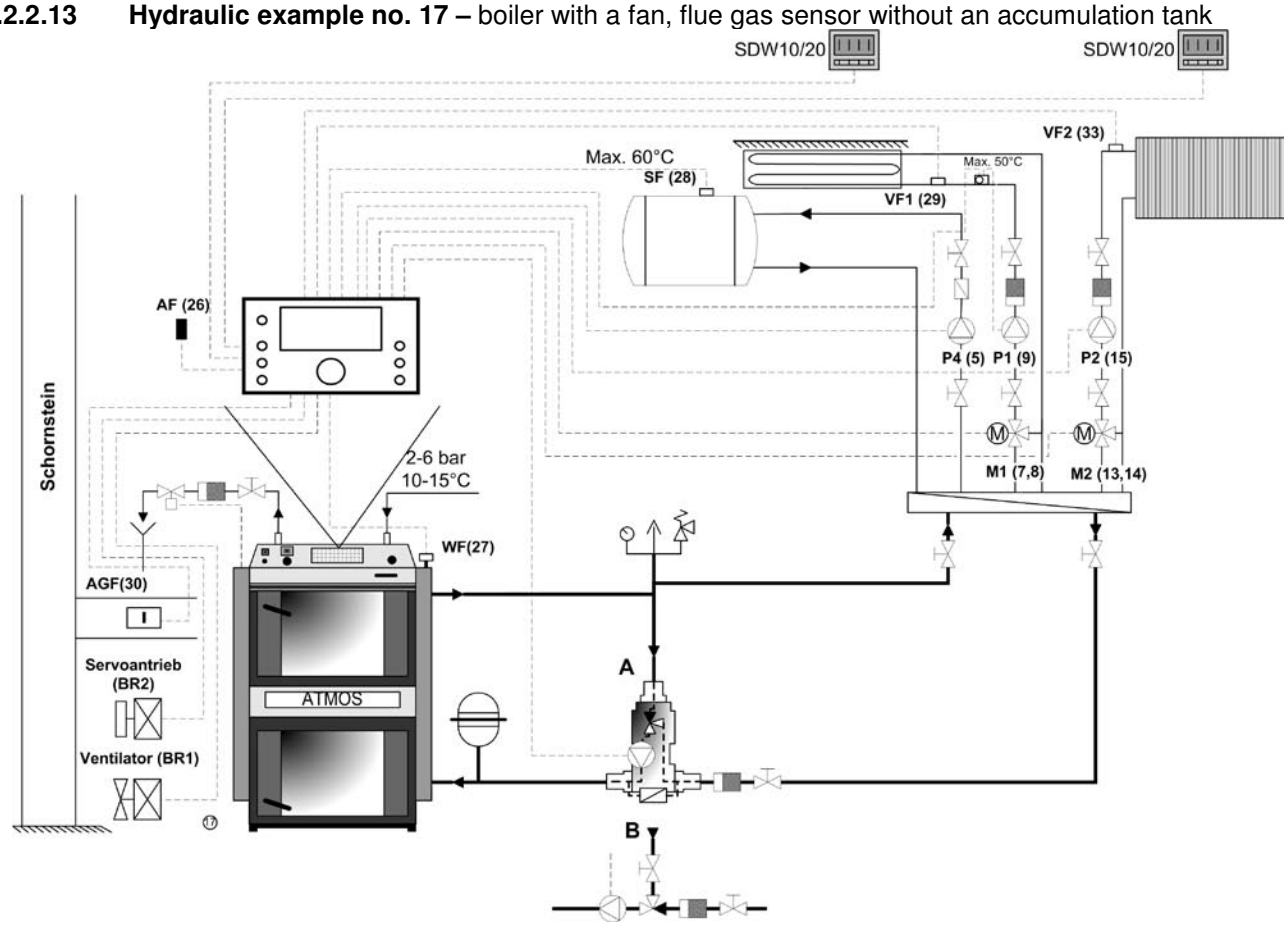
5.3.1.2.2.12 Principle and description of hydraulic diagram no. 0012

Heat source: Boiler type no. 3 - automatic boiler controlled by the controller – the boiler is controlled completely automatically on the basis of the SET-POINT of the top sensor of the tank (PF) (if the current temperature is lower than the SET-POINT, the boiler is started). When the demand is met as measured by the KSPF sensor, the boiler is switched off.

Boiler pump: If the boiler temperature (WF) is higher than the top temperature of the accumulation tank (PF), the boiler pump (DKP) is started (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump) and the zone valve connected to the variable output VO2 is opened.

System: If the top temperature of the accumulation tank (PF) is higher than PFmin (see 5.3.7.2), the other connected peripheries (HDW and MIX 1, 2) are further released. With its demands the system creates SET-POINT temperatures of the top sensor of the tank (PF). The SET-POINT is displayed in the Information ⓘ (see **Chyba! Nenalezen zdroj odkazů.**) after pressing of the rotary button on the top temperature of the accumulation tank (PF) item - the source for the system is the accumulation tank.

5.3.1.2.2.13 Hydraulic example no. 17 – boiler with a fan, flue gas sensor without an accumulation tank



5.3.1.2.2.14 Principle and description of hydraulic diagram no. 0017

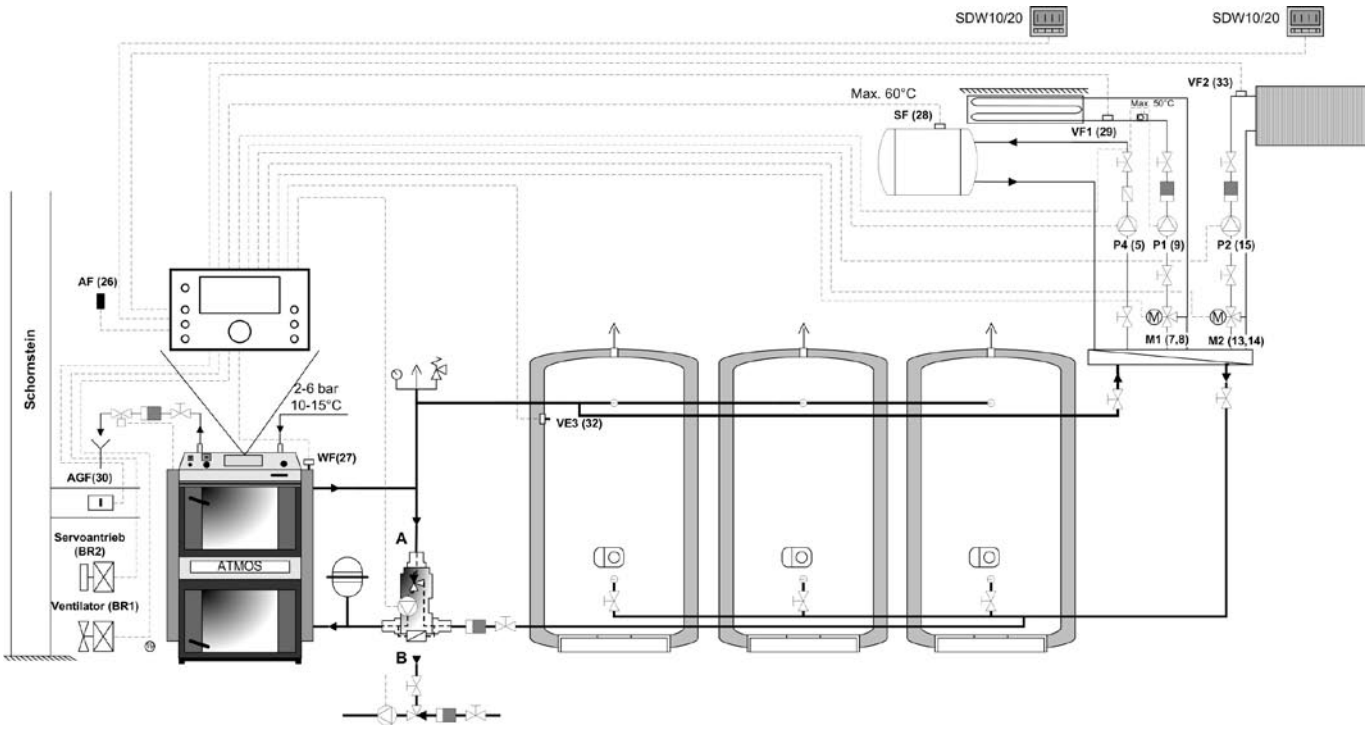
Heat source: Boiler type no. 4 - boiler controlled by the controller on the basis of the boiler temperature (WF) and flue gas temperature (AGF) connected to the variable input VI1. Further, the controller is able to protect the boiler from overheating on the basis of definition of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).

Boiler pump: The boiler pump (DKP) is started on the basis of the boiler temperature measured by the WF sensor and the flue gas temperature (AGF) (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump).

System: With increasing temperature of WF the other connected peripheries (DHW and MIX 1, 2) are further released (see **Chyba! Nenalezen zdroj odkazů.** – Release of heating circuits).

GB

5.3.1.2.2.15 Hydraulic example no. 19 – boiler with a fan, flue gas sensor, with an accumulation tank

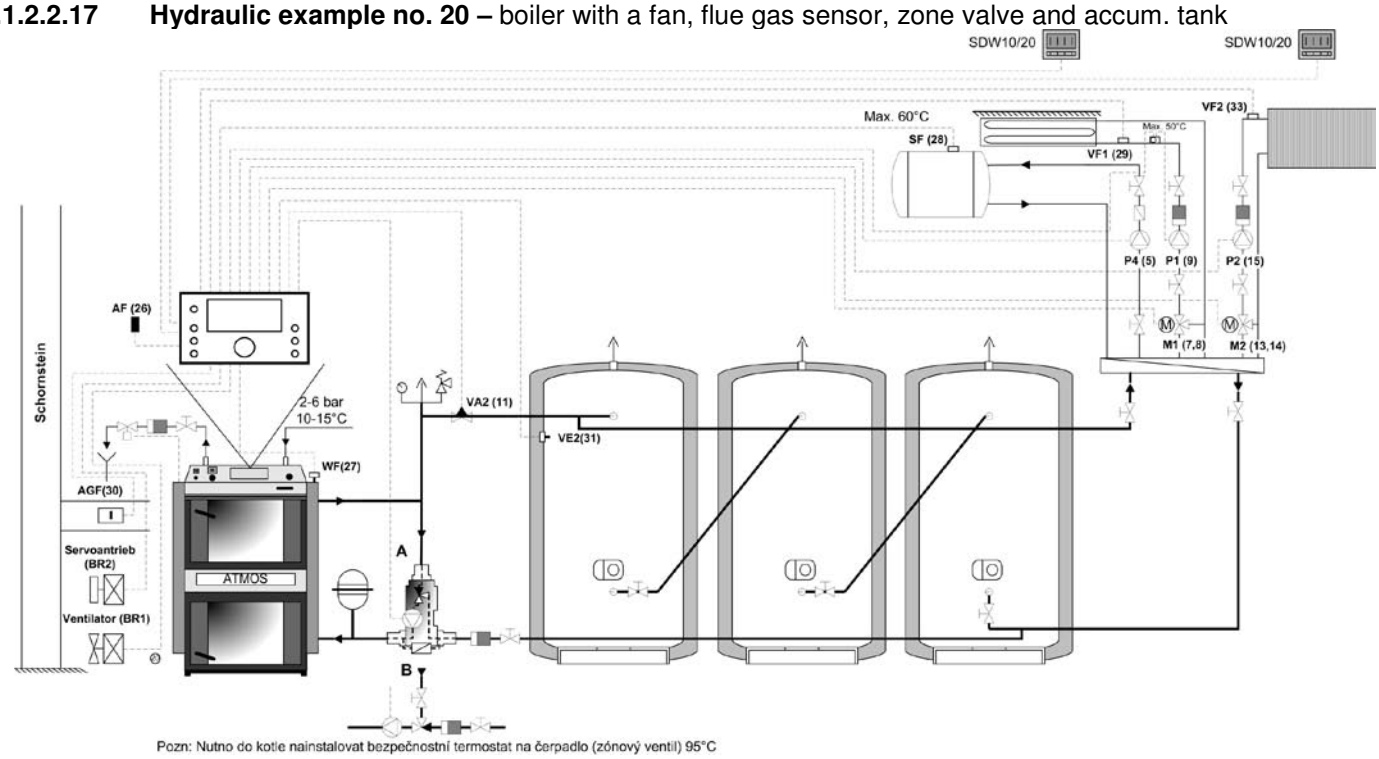


5.3.1.2.2.16 Principle and description of hydraulic diagram no. 0019

Heat source:	Boiler type no. 4 - boiler controlled by the controller on the basis of the boiler temperature (WF) and flue gas temperature (AGF) connected to the variable input VI1. Further, the controller is able to protect the boiler from overheating on the basis of definition of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).
Boiler pump:	If the boiler temperature (WF) is higher than the top temperature of the accumulation tank (PF) and at the same time AGF is higher than AGFmin, the boiler pump (DKP) is started (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump).
System:	If the top temperature of the accumulation tank (PF) is higher than PFmin (see 5.3.7.2), the other connected peripheries (HDW and MIX 1, 2) are further released. With its demands the system creates SET-POINT temperatures of the top sensor of the tank (PF) - the source for the system is the accumulation tank.
NOTE	In the case of manual heating with the use of a boiler of type 4 you are recommended to monitor and maintain sufficient temperature in the accumulation tank. The required temperature of the accumulation tank (SET-POINT) is displayed in the Information (see **Chyba! Nenalezen zdroj odkazů.**) after pressing of the rotary button on the top temperature of the accumulation tank item.

GB

5.3.1.2.2.17 Hydraulic example no. 20 – boiler with a fan, flue gas sensor, zone valve and accum. tank



5.3.1.2.2.18 Principle and description of hydraulic diagram no. 0020

Heat source: Boiler type no. 4 - boiler controlled by the controller on the basis of the boiler temperature (WF) and flue gas temperature (AGF) connected to the variable input VI1. Further, the controller is able to protect the boiler from overheating on the basis of definition of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).

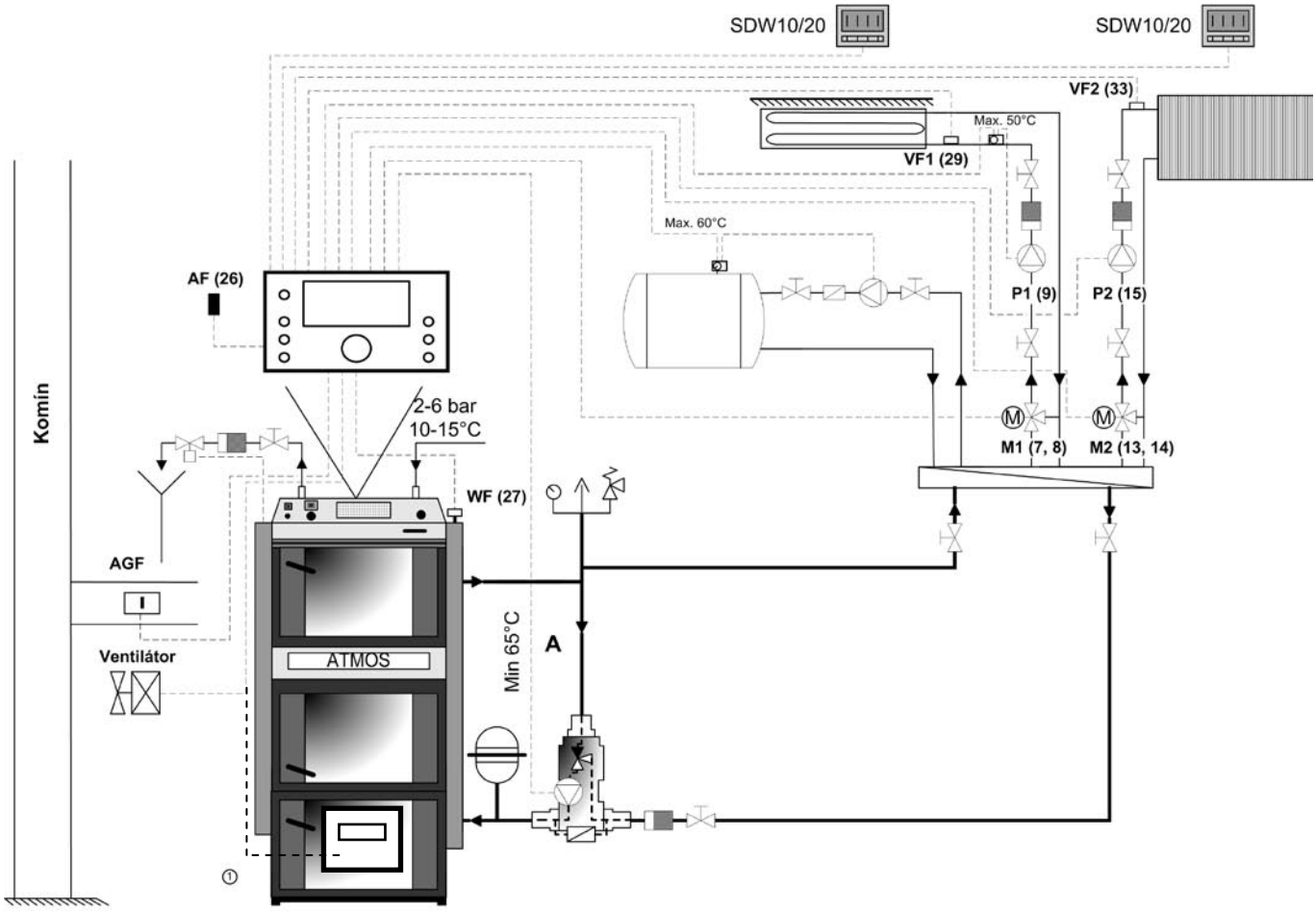
Boiler pump: If the boiler temperature (WF) is higher than the top temperature of the accumulation tank (PF) and at the same time AGF is higher than AGFmin, the boiler pump (DKP) is started (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump) and the zone valve connected to the variable output VO2 is opened.

System: If the top temperature of the accumulation tank (PF) is higher than PFmin (see 5.3.7.2), the other connected peripheries (HDW and MIX 1, 2) are further released. With its demands the system creates SET-POINT temperatures of the top sensor of the tank (PF) - the source for the system is the accumulation tank.

NOTE In the case of manual heating with the use of a boiler of type 4 you are recommended to monitor and maintain sufficient temperature in the accumulation tank. The required temperature of the accumulation tank (SET-POINT) is displayed in the Information (see **Chyba! Nenalezen zdroj odkazů.**) after pressing of the rotary button on the top temperature of the accumulation tank item.

GB

5.3.1.2.2.19 Hydraulic diagram no. 0031 – combined boiler without an accumulation tank



5.3.1.2.2.20 Principle and description of hydraulic diagram no. 0031

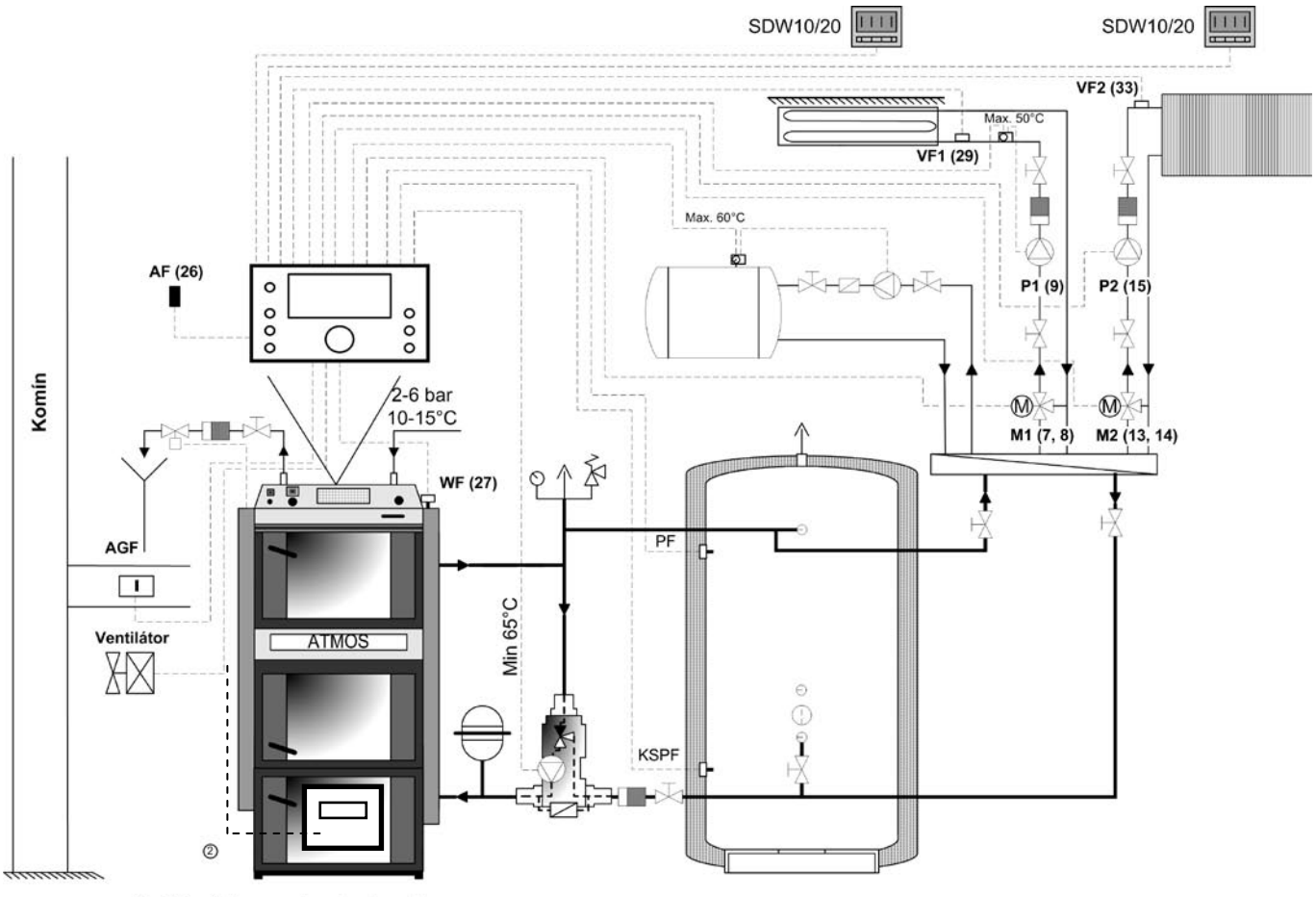
Heat source: Combined boiler (as the type no. 2 and no. 4) - boiler controlled by the controller on the basis of the boiler temperature (WF) and flue gas temperature (AGF).
The boiler burner (similarly to the type no. 2) is a boiler that is completely automatically controlled in accordance with demands of the system (DHW and MIX circuits).
The solid fuel boiler (similarly to the type no. 4) is a boiler that is operated through manual intervention of the user. In the other parameters you can set automatic switching after burning out from one type to the other one, see par. 1 of the SOURCES menu.
Further, the controller is able to protect the boiler from overheating on the basis of definition of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).

Boiler pump: The boiler pump (DKP) is started on the basis of the boiler temperature measured by the WF sensor and the flue gas temperature (AGF) (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump).

System: With increasing temperature of WF the other connected peripheries (DHW and MIX 1, 2) are further released (see **Chyba! Nenalezen zdroj odkazů.** – Release of heating circuits). The source for the SET-POINTS of the system is the boiler.

GB

5.3.1.2.2.21 Hydraulic diagram no. 0032 – combined boiler connected with an accumulation tank



5.3.1.2.2.22 Principle and description of hydraulic diagram no. 0032

Heat source: Combined boiler (as the type no. 3 and no. 4) - boiler controlled by the controller on the basis of the boiler temperature (WF) and flue gas temperature (AGF).
Boiler burner (similarly to the boiler type no. 3) - an automatic boiler controlled by the controller – the boiler is controlled completely automatically on the basis of the SET-POINT of the top sensor of the tank (PF) (if the current temperature is lower than the SET-POINT, the boiler is started). When the demand is met as measured by the KSPF sensor, the boiler is switched off.
Solid fuel boiler (similarly to the type no. 4) - a boiler operated through manual intervention of the user. In the other parameters you can set automatic switching after burning out from one type to the other one, see par. 1 of the SOURCES menu.
Further, the controller is able to protect the boiler from overheating on the basis of definition of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).

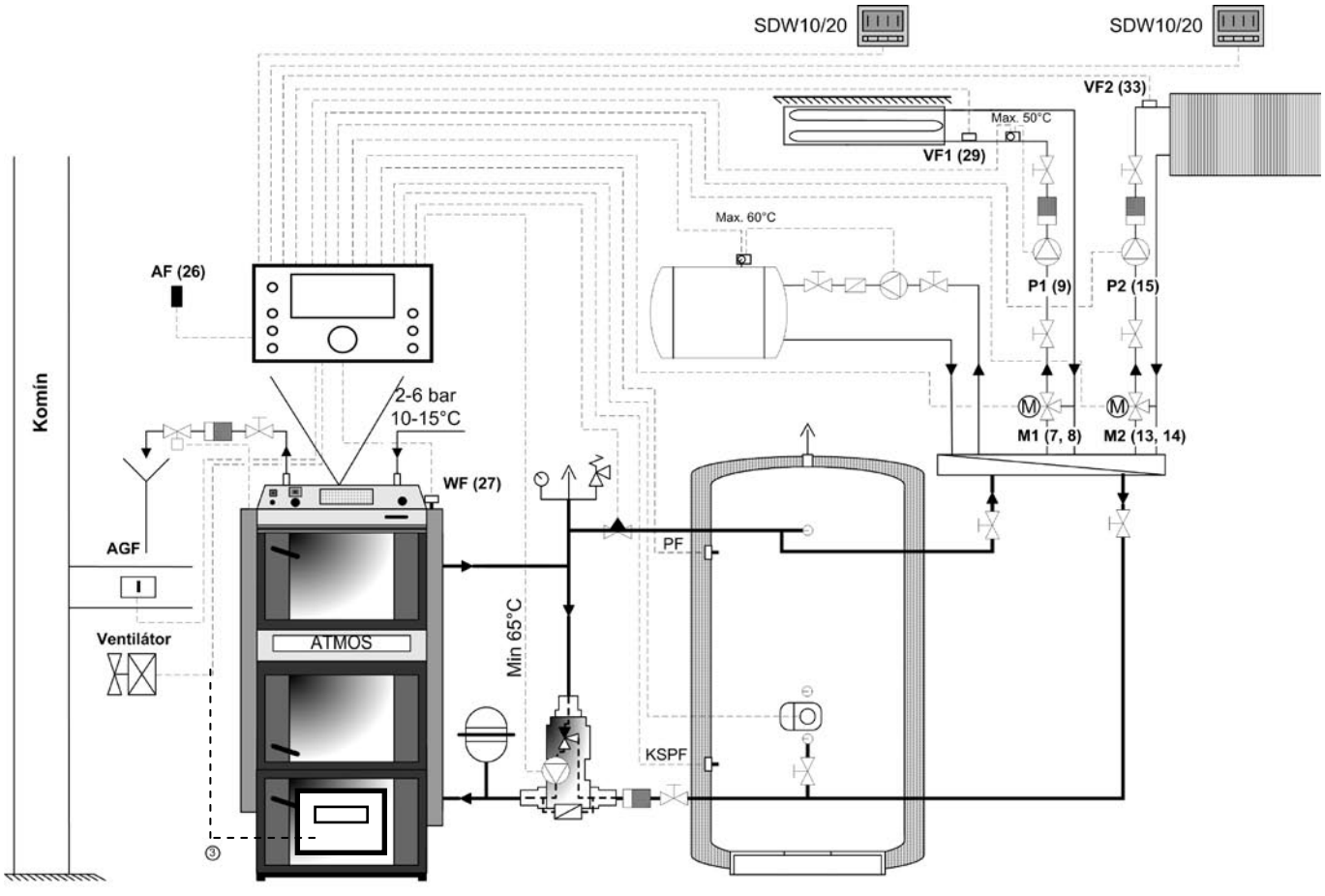
Boiler pump: If the boiler temperature (WF) is higher than the top temperature of the accumulation tank (PF) and at the same time AGF is higher than AGFmin, the boiler pump (DKP) is started (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump).

System: If the top temperature of the accumulation tank (PF) is higher than PFmin (see **5.3.7.2**), the other connected peripheries (HDW and MIX 1, 2) are further released. With its demands the system creates SET-POINT temperatures of the top sensor of the tank (PF) - the source for the system is the accumulation tank.

NOTE In the case of manual heating with the use of a boiler of type 4 you are recommended to monitor and maintain sufficient temperature in the accumulation tank. The required temperature of the accumulation tank (SET-POINT) is displayed in the Information ⓘ (see **Chyba! Nenalezen zdroj odkazů.**) after pressing of the rotary button on the top temperature of the accumulation tank item.

GB

5.3.1.2.2.23 Hydraulic diagram no. 0033 – combined boiler connected with an accumulation tank via a zone valve



5.3.1.2.2.24 Principle and description of hydraulic diagram no. 0033

Heat source: Combined boiler (as the type no. 3 and no. 4) - boiler controlled by the controller on the basis of the boiler temperature (WF) and flue gas temperature (AGF).
Boiler burner (similarly to the boiler type no. 3) - an automatic boiler controlled by the controller – the boiler is controlled completely automatically on the basis of the SET-POINT of the top sensor of the tank (PF) (if the current temperature is lower than the SET-POINT, the boiler is started). When the demand is met as measured by the KSPF sensor, the boiler is switched off.
Solid fuel boiler (similarly to the type no. 4) - a boiler operated through manual intervention of the user. In the other parameters you can set automatic switching after burning out from one type to the other one, see par. 1 of the SOURCES menu.
Further, the controller is able to protect the boiler from overheating on the basis of definition of the parameter (see **Chyba! Nenalezen zdroj odkazů.** - Forced boiler losses) in accordance with KTmax (see **Chyba! Nenalezen zdroj odkazů.**).

Boiler pump: If the boiler temperature (WF) is higher than the top temperature of the accumulation tank (PF) and at the same time AGF is higher than AGFmin, the boiler pump (DKP) is started (see **Chyba! Nenalezen zdroj odkazů.** – Starting the boiler pump) and the zone valve connected to the variable output VO2 is opened.

System: If the top temperature of the accumulation tank (PF) is higher than PFmin (see **5.3.7.2**), the other connected peripheries (HDW and MIX 1, 2) are further released. With its demands the system creates SET-POINT temperatures of the top sensor of the tank (PF) - the source for the system is the accumulation tank.

NOTE In the case of manual heating with the use of a boiler of type 4 you are recommended to monitor and maintain sufficient temperature in the accumulation tank. The required temperature of the accumulation tank (SET-POINT) is displayed in the Information ⓘ (see **Chyba! Nenalezen zdroj odkazů.**) after pressing of the rotary button on the top temperature of the accumulation tank item.

5.3.1.3 HYDRAULIC Menu / par.2 – DHW pump output

The selection has been extended with the following value:

46 - **ETUV** - Controlled electric heating of the DHW accumulation tank - the output is activated if after the set time the required hot water temperature (SOLID FUEL, par. 4) or flue gas temperature (SOLID FUEL, par. 18) in the heater is not met. The output is deactivated when either the required DHW temperature or the charging temperature of the heat source is achieved. If low-tariff charging is used, the time program of DHW must be set accordingly for charging to comfortable temperature during the low-tariff period.

Default setting 1

⚠ NOTE In hydraulic examples without an accumulation tank the DHW tank may be charged by the boiler pump, i.e. this output may only control an electric valve in accordance with the same logic as the charging pump, which means that this parameter remains set to 1.

⚠ RECOMMENDATION If DHW heating is only designed through an exchanger, e.g. as a floating heater in the accumulation tank and the source of heat is an automatic boiler of type 3, 5 or 6, you should set this parameter =1 even though the heater is not directly charged as this will cause demand for the boiler, which will subsequently charge the accumulation tank. Naturally, the DHW sensor must be placed in the floating heater.

5.3.1.4 HYDRAULIC Menu / par.3 and 4 – Output of Mixing Circuits 1, 2

The selection has been extended with the following values:

40 - **KRK** – Mix. circuit 1 - constant cooling temperature – mixing circuit designed for cooling to a constant temperature. A precondition for this function is connection and definition of the heating/cooling switch to the variable input. Cooling function - see the MIX menu.

45 - **EHP** - Electric heating of the accumulation tank – if the required temperature is not achieved at the top sensor of the accumulation tank after expiration of the set time period (see the SOURCES menu, par. 11 - EHP switching delay), the output will be switched on.

You can also define for this electric heating whether it should only be used as a backup source with the antifreeze function, or whether it should act as a full source (see the SOURCES menu, par. 9 – daytime operation of EHP). If it is only selected as a backup source with the antifreeze function, all the required temperatures are set to reduced values (room temperature = , DHW = DHW menu, par.1) regardless of the selected control mode.

If the DHW heater is integrated in the accumulation tank (floating heater), you can set summer heating via EHP (see the SOURCES menu, par. 10 – summer heating of DHW).

⚠ **NOTE** The minimum SETPOINT of the accumulation tank must be defined (see the TANK menu, par. 14) > OFF).

Default setting 3

5.3.1.5 HYDRAULIC Menu / par. 6, 7 – Variable Outputs VO1,2

The selection has been extended with the following values:

41 - **UHK** – Heating/cooling switch – If a heat pump with a cooling function is used in the circuit, the output will activate the cooling switch on activation of the cooling function. Cooling function - see the MIX menu.

45 - **EHP** - Electric heating of the accumulation tank – the same as in par.3 or 4=45 (see chapter 5.3.1.4).

46 - **ETUV** - Controlled electric heating of the accumulation tank – the same as in par. 2=46 (see chapter 5.3.1.3).

5.3.1.6 HYDRAULIC Menu / par. 8, 9 and 10 – Variable Inputs VI1 - VI3

The selection has been extended with the following values:

18 – **FPF** – Bottom sensor of the accumulation tank for an automatic boiler 3, 6 – used in case when e.g. the KSPF sensor is used for solar charging of another tank than that charged by the automatic (pellet) boiler – usually in the case of solar heating of a bivalent DHW tank.

GB

5.3.2 MIX.VALVE - 1 Menu

This menu is displayed after activation of the corresponding parameter, see the HYDRAULIC menu and contains all parameters necessary for programming of the heating circuits. Max. 2 mixing circuits per controller (MIX 1 and MIX 2) are available.

The heating circuit parameters described below are available for each heating circuit and are set separately in the respective menus.

5.3.2.1 MIX 1 Menu - overview of parameters

Parameter	Description	Setting range / Setting values	Default setting	Setting
MOD	Reduced heating mode	ECO Switch-off mode RED Reduced mode	ECO	
HEAT SYSTEM	Heating system (exponent)	1.00 ... 10.00	1.10	
03	Room unit function	OFF Heating temperature display, room sensor OFF, operation OFF 1 Room temperature display, room sensor active, operation active 2 Room temperature display, room sensor active, operation OFF 3 Room temperature display, room sensor OFF, operation active	OFF	
04	Room factor	OFF ... 500 % RC Room controller active	OFF	
05	Heating curve adaptation	OFF, ON	OFF	
06	Optimization activation	OFF, 1 ... 8 h	OFF	
07	Heating limit	OFF, 0.5 … 40 K	OFF	
08	Frost protection limit	5 ... 30 °C	10 °C	
09	Room thermostat function	OFF, 1 ... 5 K	OFF	
10	Outdoor temperature assignment	0 Control by mean value of outdoor sensors 1 + 2 1 Control by outdoor sensor 1 2 Control by outdoor sensor 2	0	
11	Set constant temperature value	10 ... 95 °C;	20 °C	
12	Minimum temperature limit	10 °C ... Maximum temperature limit (parameter 13)	20 °C	
13	Maximum temperature limit	Min. temperature limit setting (parameter 12 ... WEZ parameter 30	75 °C	
14	Increasing the source SET-POINT	0 ... 20 °C	8 °C	
15	Extended pump running time	0 ... 60 min.	5 min	
16	Compensation (drying) heating function	OFF, 1, 2, 3	OFF	
17	Return temperature limit	10 ... 90 °C	90 °C	
18	Proportional band X_P	1 ... 50 %/K	5.0 %/K	
20	Integral action time Tn	1 ... 600 sec.	180 sec.	
21	Drive running time	10 ... 600 sec.	120 sec.	
22*	Drive function in the end position	1 Constant control signal in the end position 2 Control signal suppressed in the end position (drive without current)	2	
23	only SDW20	1 … 50%/K	8 %/K	
24	only SDW20	5…240 min	35 min	
25	Holiday Mode	STBY, REDU	STBY	
26	Dynamic protection (VF)	OFF, 1-by WF, 2-by PF	OFF	
50	Cooling starting point	OFF, 15…45	OFF	
51	Max. cooling temperature	15…..45	35°C	
52	Required flow temp. at par. 50	7…..30	18°C	
53	Required flow temp. at par. 51	7…..30	24°C	
54	Required room temp. at par. 50	15…30	23°C	
55	Required room temp. at par. 51	15…30	28°C	
56*	Cooling limitation	7……24	18°C	
Heating circuit name				

*OEM

5.3.2.2 MIX.VALVE - 1 Menu / par. 26 – Dynamic VF flow temperature protection

Function Dynamic protection of the VF flow value serves as protection against the occurrence of hydraulic overpressure from the heating circuit to the heat source and in conjunction with an accumulation tank it then serves as protection against unwanted aspiration of cold water from the accumulation tank to hot water from the boiler, which would decelerate the increase of the flow temperature value and the accumulation tank temperature.

The flow temperature value is dynamically adjusted in such a way that its maximum value can be 2K lower than the heat source (heater or accumulation tank) temperature.

If the calculated VF temperature is not achieved within 60 minutes, a logical alarm of a failure to achieve the required temperature will be displayed, which may serve e.g. as information for charging of the accumulation tank or lighting the fire in the solid fuel boiler

Default setting OFF

Setting range OFF
1 – adjustment by WF – hydraulic diagrams without an accumulation tank
2 – adjustment by PF – hydraulic diagrams with an accumulation tank

Example The flow temperature value has been calculated in accordance with the current outdoor temperature and requirement as 75°C, the current temperature in the accumulation tank is only 53°C. The automatic heat source immediately starts to cover the required temperature of the accumulation tank and as protection from mixing of a high temperature of the boiler and low temperature of the accumulation tank the flow temperature value is automatically adjusted to a 2K lower temperature than the accumulation tank, i.e. to the resulting temperature of 51°C. At simultaneous charging from the source and increasing temperature of the tank the VF value is shifted towards the calculated required value.

5.3.2.3 MIX.VALVE - 1 Menu / par. 50 – Outdoor temperature for COOLING activation

The cooling function may be defined in the mixing circuit and it is the inversion function of heating. The parameter value determines the initial point of the cooling curve and at the same time releases the cooling function. For proper functioning of cooling a cooling source must be connected (e.g. a heat pump with the heating/cooling function) with the heating/cooling switching contact connected to a variable output (see the HYDRAULIC Menu, par. 6 or 7=41)

The **Cooling** function works as follows:

- If the outdoor temperature AF > switching temperature, the function is activated (the switching temperature value can be the same or higher that the transition temperature to the summer mode)
- If the outdoor temperature AF < switching temperature-1K, the function is deactivated.
- The cooling function has a higher priority than a possible parallel shift of heating (e.g. cooling supersedes transition to the summer mode).
- Cooling uses the same outdoor temperature sensor as heating.
- If the sensor of the VF mixing circuit is damaged, the function will be deactivated, the mixing valve closed and the circuit pump switched off.
- The cooling function is suppressed when drying is activated.
- If the thermostat function is set, the activation and deactivation of the cooling function is shifted with the development of the room temperature

The cooling curve is controlled according to the outdoor sensor, depending on the outdoor temperature the cooling temperature changes; therefore, the cooling curve must be set:

- The course of the curve is always limited by the minimum cooling temperature (par. 56).
- The cooling curve starts at the outdoor switch-on temperature OT-ON (par. 50), at which the initial temperature FT-ON is determined (par.52)
- The cooling curve ends at the outdoor switch-off temperature OT-OFF (par.51), at which the max. temperature FT-OFF is determined (par.53)
- The room temperature develops similarly to the outdoor temperature, following a linear curve. It is recommended that it have parallel orientation with the outdoor temperature to avoid a big difference between the indoor and outdoor temperature with regard to the user's health. If a room unit (room temperature sensor) is connected and the room factor is set, the development of the cooling curve is corrected similarly to the heating curve. To enhance comfort, the user can set exact requirements (required daytime and night-time temperature - see the DAY and NIGHT control buttons).

WARNING For the cooling function you must consider whether the heating circuit can work as a cooler. The control elements as the thermal heads of radiators must be removed from the system if the cooling function is used as the heating system will be operated at higher room temperatures than are achieved in the winter mode and the control heads would close the radiators, which would make the cooling function impossible.

Default setting OFF
Setting range OFF……45°C

5.3.2.4 MIX.VALVE - 1 Menu / par. 51 – Outdoor temperature for cooling limitation

End point for the cooling curve – generally max. summer outdoor temperature.

Default setting 35°C
Setting range 15…45°C

5.3.2.5 MIX.VALVE - 1 Menu / par. 52 – Flow temperature on activation of COOLING

Flow temperature on activation of the cooling function - it defines the initial point of the cooling curve together with par. 50. The temperature is usually set 4-6°C lower than the outdoor switch-on temperature for the cooling function (par.50)

Default setting 18°C
Setting range 7…30°C

5.3.2.6 MIX.VALVE - 1 Menu / par. 53 – Flow temperature for limitation of COOLING

Flow temperature for limitation of the cooling function - it defines the end point of the cooling curve and thus its development together with par. 51. The temperature is determined with regard to the character of the heating (cooling) circuit:

- For fan-coil heating – contactless, small-area – the temperature is set as low as possible to achieve the highest possible exchange of energy, generally the same as the bottom limit of the cooling temperature (par.56)
- For floor heating – contact, large-area design – a higher temperature is set with regard to the contact and high energy exchange capacity (generally 4-8°C lower than par. 51).

Default setting 24°C
Setting range 7…30°C

5.3.2.7 MIX.VALVE - 1 Menu / par. 54 – Room temperature on activation of COOLING

Room temperature on activation of the cooling function - it defines the initial point of the room temperature curve. Its value is generally the same or 1°C lower than the activation temperature of cooling.

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Default setting 24°C
Setting range 15…30°C

5.3.2.8 MIX.VALVE - 1 Menu / par. 55 – Room temperature on limitation of COOLING

Room temperature on limitation of the cooling function - it defines the end point of the room temperature curve. With regard to the user's health the value should be set max. 5°C lower that the limiting outdoor cooling temperature to avoid a high difference between the outdoor and room temperature.

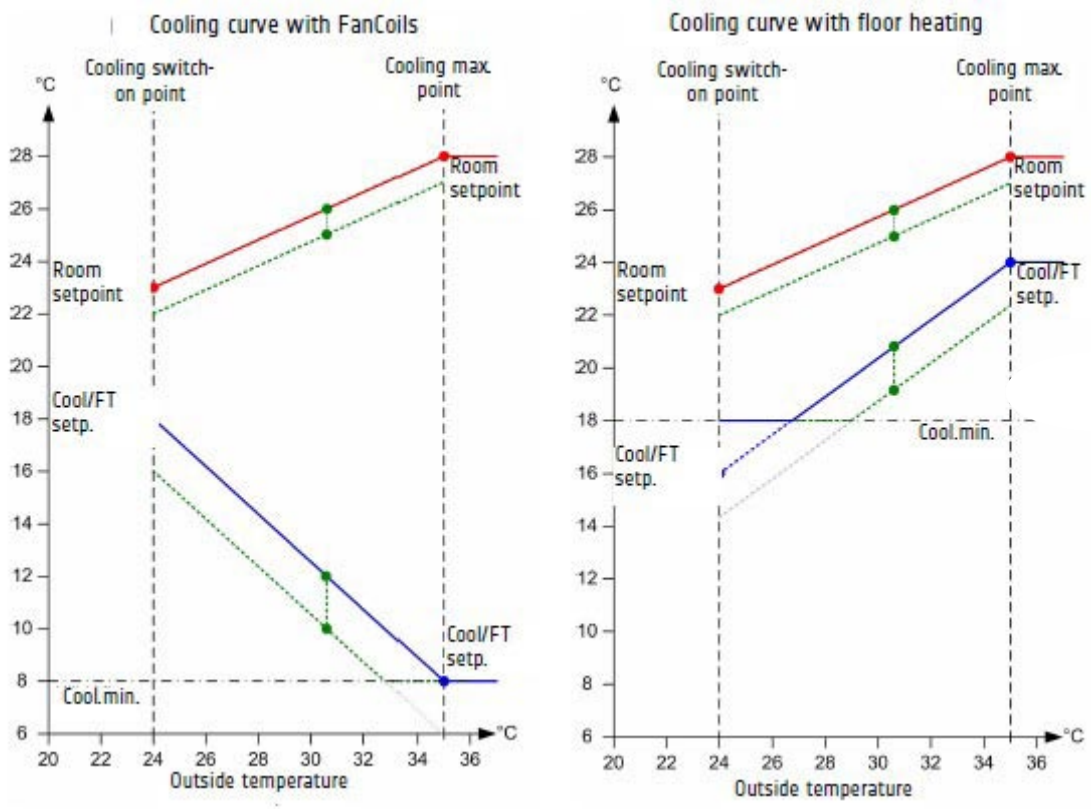
Default setting 28°C
Setting range 15…30°C

5.3.2.9 MIX.VALVE - 1 Menu / par. 56 – Minimum flow temperature

The minimum flow temperature is set with regard to the cooling source to avoid calculation of too low source temperatures (freezing point, minimum operation temperatures of the heating system, etc.).

Default setting 18°C
Setting range 7…24°C

5.3.2.9.1 Diagram of temperatures of the cooling function



5.3.2.10 MIX.VALVE - 1 Menu / par. 26 – Circuit name

Function Naming a heating circuit for better orientation

5.3.3 MIX.VALVE - 2 Menu

NOTE The menu structure and the list of parameters is identical with the MIX.VALVE - 1 Menu

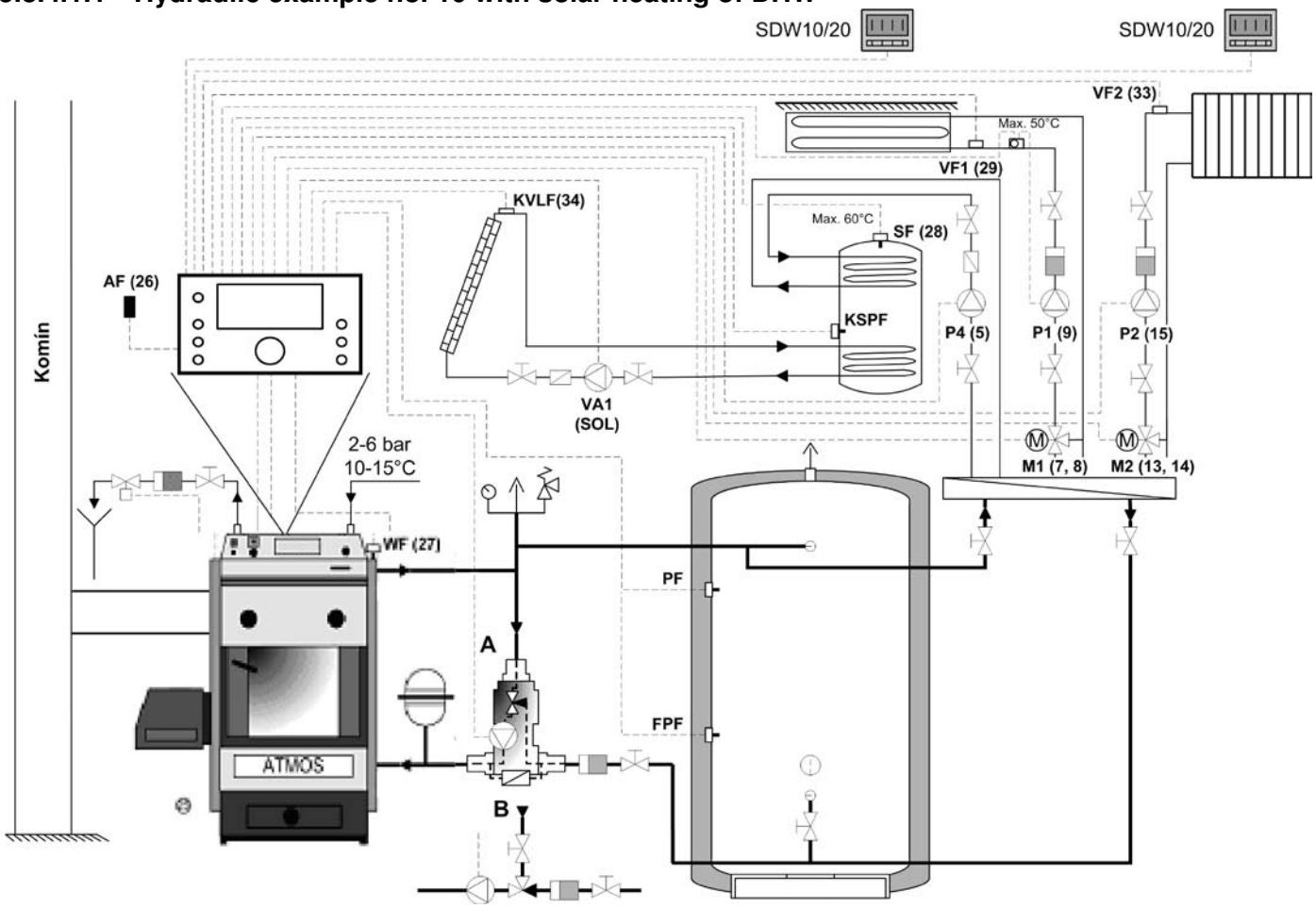
GB

5.3.4 SOLAR Menu

Extension of possibilities of solar heating control in conjunction with an automatic boiler 3, 6 - by defining the bottom sensor of the accumulation tank for the boiler.

5.3.4.1 SOLAR Menu – Examples of solar circuit connection with the definition of parameters

5.3.4.1.1 Hydraulic example no. 10 with solar heating of DHW



5.3.4.1.2 Example of parameter settings

HYDRAULIC Menu

Parameter	Description	Default setting
1	Hydraulic diagram	0010
2	DHW pump output	1 (DHW loading pump)
3	Output of mixing circuit 1	3 (mixing circuit)
4	Output of mixing circuit 2	3 (mixing circuit)
6	Variable output 1	15 (SOL - solar loading pump)
7	Variable output 2	OFF
8	Variable input 1	16 (AGF -flue gas temperature sensor)
9	Variable input 2	18 (FPF - bottom sensor of the accum. tank for control of the automatic boiler 3, 6)
10	Variable input 3	19 (PF - top acc. tank sensor)

SOLAR Menu

05	Max. buffer limit	60 °C
	…	
	…	

SOLID FUEL Menu

1	Boiler type	3
	…	

GB

	…	
	…	

BUFFER Menu

	…	
14	Buffer temperature	60℃

5.3.5 SOLID FUEL Menu

This menu is used to define parameters for the boiler - boiler type, differential, boiler pump control, etc.

5.3.5.1 SOLID FUEL Menu - overview of parameters

Parameter	Description	Setting range / Setting values	Default setting	Setting
1	Boiler type	OFF 1 Uncontrolled boiler 2 Pellet boiler without a buffer 3 Pellet boiler / buffer operation 4 Solid fuel boiler with a flue gas sensor **5 Combined boiler (4+2)** 6 **Combined boiler (4+3)**	4	
2	Minimum temperature KT_{min}	20….80	80℃	
3	Maximum temperature KT_{max}	30…110	95℃	
4	Boiler pump ON	30…80℃	30℃	
5	Boiler pump switching differential	2…40K	5K	
6	Pellet burner switching differential	2…40K	6K	
7	Fan switching differential	2…30	3K	
8	Fan type	1 – Exhaust fan 2 – Pressure fan	1	
9	Fuel loading time	1…10	3 min.	
10	Max. exhaust fan flue gas temperature	50…500	500℃	
11	Max. flue gas temperature for the exhaust flap	50…500	180℃	
12	Exhaust flap switching differential	2…50	5K	
13	Buffer switching differential	2…40℃	5K	
14	Start-up protection of the heater - heating circuit deactivation	5…KTmin	36℃	
15	SET-POINT increase	2…20	4K	
16	Forced heater losses	OFF, 1 – to MIX, 2 – to DHW ,3 – to MIX and DHW	3	
17	Boiler circulation pump switch-over to WF/AGF	1 WF 2 AGF	2	
18	Minimum flue gas temperature	50℃…500℃	80℃	
19	Boiler switch-off type	1 WF 2 AGF	1	
20	Protection at start-up of the boiler circulation pump	ON, OFF	OFF	
21	**Operation of exhaust fan together with the pellet burner**	**ON, OFF**	**OFF**	
22	**Summer heating of DHW with a boiler of type 5, 6**	**ON, OFF**	**OFF**	
RESET				

5.3.5.2 SOLID FUEL Menu / par. 1 – Boiler type

Function This parameter defines the boiler type. The parameter is set automatically after selection of the hydraulic diagram no.

Default setting 4

Setting range

OFF No boiler is connected to the controller, i.e. the controller is only used to control heating circuits (e.g. combination of several controllers in large systems), solar heating, DHW heating, etc., see combination of more controllers to control more heating circuits.

1 – Uncontrolled boiler – not controller by the controller

Function It is a boiler type that the controller either cannot control - the boiler does not have e.g. a fan - or the boiler has its own control. Only the water temperature (WF) is measured in the boiler for the purpose of control of the boiler pump.
This value is automatically defined in hydraulic examples 1, 3 and 4

2 – Pellet boiler – without a buffer (accumulation tank)

Function This is a controlled automatic boiler type. The boiler is not connected to an accumulation tank and is controlled in such a way that on achieving the operation temperature (KTmin+dif) it is switched off and after cooling down by the differential it is switched on. Also, the operation temperature is controlled in accordance with the SET-POINT.
With this boiler the fan and burner are connected to the same terminal - see INSTALLATION.

This value is automatically set in hydraulic example 9.

3 – Pellet boiler – to an accumulation tank

Function This is a controlled automatic boiler type. The boiler is connected to the accumulation tank and is controlled on the basis of the operation temperature and temperatures in the accumulation tank (buffer).
With this boiler the fan and burner are connected to the same terminal - see INSTALLATION.
This value is automatically set in hydraulic examples 10 and 12.

4 – Controlled solid fuel boiler (with flue gas temperature monitoring).

This is a solid fuel boiler type that is controlled through fan control in accordance with the flue gas temperature.
This value is automatically set in hydraulic examples 17, 19 and 20

5 – Combination of boilers 4 + 2

Function A combined boiler can be operated as an automatic, e.g. pellet boiler or as a boiler with manual fuel loading. Generally, this is the case of boilers DC15EP(L), DC18SP(L), DC25SP(L), DC32SP(L), or a solid fuel boiler with a burner in the top door. The boiler is connected without an accumulation tank, i.e. the heat circuit is released on the basis of its water and flue gas temperature.
During the installation the fan and the burner are connected separately to different terminals – see INSTALLATION
This value is automatically set in hydraulic example 31

6 – Combination of boilers 4 + 3

Function A combined boiler can be operated as an automatic, e.g. pellet boiler or as a boiler with manual fuel loading. Generally, this is the case of boilers DC15EP(L), DC18SP(L), DC25SP(L), DC32SP(L), or a solid fuel boiler with a burner in the top door. The boiler is connected with an accumulation tank, i.e. the heating circuit is released on the basis of the temperature of the PF sensor.
During the installation the fan and the burner are connected separately to different terminals – see INSTALLATION
This value is automatically set in hydraulic examples from no. 32 on.

5.3.5.3 SOLID FUEL Menu / par. 21 – Operation of fan together with burner

Function With combined boiler of the type no. 5, 6 you can select whether the fan will be in operation together with the pellet burner. The DCxxEP(L) and DCxxSP(L) boilers are designed for burner operation without an exhaust fan, with boilers with a burner in the top door (e.g. DC18S with an adjustment, etc.) the fan must run together with the burner.

Default setting OFF
Setting range OFF – operation without a fan
ON – operation with a fan

WARNING The fan used in combined boilers must always be of the exhaust type; a pressure fan must never be used together with a burner.

5.3.5.4 SOLID FUEL Menu / par. 22 – Summer heating of DHW by a boiler of type 5,6

Function This parameter defines charging of DHW with the burner of a combined boiler 2, 3 in the active summer mode.

Default setting OFF
Setting range ON – heating allowed – DHW will be heated by the burner throughout the year
OFF – heating in the heating season only

GB

5.3.6 SOURCES Menu

This menu is used to define parameters of combined boilers, EHP, etc.

5.3.6.1 SOURCES Menu - overview of parameters

Parameter	Description	Setting range / Setting values	Default setting - in acc. with the hydr. diagram	Setting
1	Automatic switch over from SRC-1	OFF 1 Switch over to SRC-2	OFF	
2	Automatic return to SRC-1	OFF, ON	OFF	
3	Parallel operation of 2 sources - CASCADE	OFF, ON	OFF	
4	KTzero2	10…90°C	30°C	
5	KTmin2	10…90°C	80°C	
6	Differential of KTmin2	0…10°C	5°C	
	KTmax2	10…90°C	95°C	
8	Summer heating of DHW with automatic return to SRC-1	OFF, ON	OFF	
9	Comfortable EHP heating	OFF, ON	OFF	
10	DHW heating with EHP in the summer mode	OFF, ON	OFF	
11	EHP switch-on delay	0 – 250 min	0 min	
12	Name of SRC-1		SRC-1	
13	Name of SRC-2		SRC-2	

5.3.6.2 SOURCES Menu / par. 1 – Automatic switch-over after burning out of SRC-1

Function Some types of combined boilers – DcxxEP(L), DCxxSP(L) – enable operation of both sources of heat without the necessity of any installation or removal of a burner, etc. This parameter enables automatic switch-over after burning out of the solid fuel boiler to the automatic source - burner, which may then automatically continue operating.

Default setting OFF - 1

Setting range **OFF** – The boiler (source) type can only be changed by manual selection and activation, see control buttons. This is usually a boiler type where a burner must be additionally installed or removed to enable solid fuel operation, i.e. an automatic change is not possible.

1 – automatic switch-over to source 2 (SRC-2)

Function Automatic switch-over to SRC-2 (generally a burner) is controlled on the basis of the flue gas temperature, i.e. the switch-over is controlled by the setting of parameter no. 18 in the SOLID FUEL menu. If the flue gas temperature drops below the set value, the system will switch over to source 2, which may then automatically supply the heating system on the basis of the same rules that are valid for boiler types 2 or 3.

NOTE Only if the boiler type is 5 or 6.

5.3.6.3 SOURCES Menu / par. 9 – Comfortable EHP operation

Function This parameter defines whether EHP (electric heating coil of the accumulation tank) should be a full source or only operate in the antifreeze mode.

Setting range is **OFF** – If EHP is activated, values for antifreeze room temperature are calculated regardless of the control mode. If the boiler on, EHP is disconnected and the room temperature is maintained on the basis of the selected control mode.

ON – EHP is a full source covering all demands.

NOTE Only if EHP is selected

5.3.6.4 SOURCES Menu / par. 10 – Summer heating of DHW with EHP

Function This parameter defines activation of EHP for summer heating of DHW from the accumulation tank. This function is generally use in an application with a heater inserted in the accumulation tank.

Setting range **OFF** – EHP operation in the winter period only (the outdoor temperature is lower than the SUMMER par. or SUMMER control mode)
ON – Operation of EHP in the summer season as well

NOTE Only if EHP is selected

5.3.6.5 SOURCES Menu / par. 11 – Delayed switch-on of EHP

Function Activation of EHP can be delayed by the set value for possible ignition of the boiler.

Setting range 0…250min

NOTE Only if EHP is selected

5.3.6.6 SOURCES Menu – Naming of SRC-1

For better identification of the source you can select your own name for the SRC-1 source in the length of 5 characters (e.g. WOOD)

NOTE Boiler type 5 or 6 must be selected

5.3.6.1 SOURCES Menu – Naming of SRC-2

For better identification of the source you can select your own name for the SRC-1 source in the length of 5 characters (e.g. PELET)

NOTE Boiler type 5 or 6 must be selected

5.3.7 BUFFER Menu

This menu is displayed after activation, see the HYDRAULIC Menu, and is used to define parameters of the accumulation tank.

5.3.7.1 BUFFER Menu - overview of parameters

Parameter	Description	Setting range / Setting values	Default setting - in acc. with the hydr. diagram	Setting
01	Minimum temperature	5 °C ... Maximum temperature	40 °C	
02	Maximum temperature	Minimum temperature ... 95 °C	105 °C	
03	Parallel boiler shift	-10 ... 50 K	8 K	
04	Buffer switching differential	1 ... 20 K	2 K	
05	Forced losses	OFF 1 To the DHW tank 2 To the heating circuits	OFF	
06	Extended switch-on differential time	(Switch-off differential + 2 K) ... 30 K	0 K	
07	Extended switch-off differential time	X K ... (Switch-on differential – 2 K)	-3 K	
08	Buffer start-up protection	OFF No start-up protection ON Active start-up protection	ON	
09	Buffer charging protection	OFF No discharge protection ON Active discharge protection	ON	
10	Buffer tank operation mode	1 MC1,2 and DHW charging control 2 MC1,2 charging control without DHW 3 MC1,2 and DHW discharging control 4 MC1,2 discharging control without DHW 5 Charging control with DHW switching 6 Discharging control to the heater	1	
11	Extended buffer running time	3…60	3 min	
14	Buffer temperature setting	OFF, 5…100 °C	60°C	
15	WF < VE differential (DKP OFF)	(Switch-off differential + 2 K) ... 30 K	-3 K	
16	WF > VE differential (DKP ON)	X K ... (Switch-on differential – 2 K)	0 K	

5.3.7.2 BUFFER Menu / par. 1 – Minimum buffer temperature

Function This parameter defines the lowest buffer temperature = circuit switching temperature

Default setting 40°C

Setting range 5°C…par.2

WARNING The setting of minimum temperature of the tank influences the operation of the heating circuits, i.e. in case of a drop below the set value the heating circuits are off = do not heat any more; however, an important factor is whether it is sensible to discharge the accumulation tanks to too low temperatures that are not usually sufficient to cover requirements of the heating circuits and at the same time you should remember that the lower temperature at the start of the charging cycle, the longer the re-charging will take. There is a general rule: timely intervention = ignition of the boiler and recharging. This problem does not occur with automatic boilers as they are always activated at a drop of the accumulation tank temperature below the calculated value for the current required SET-POINT of the accumulation tank. This value is displayed in the Information in the BUFFER item after pressing of the rotary button - left value = transmitted request and right value = current temperature. With boilers with manual ignition and loading this is the best information for timely ignition, i.e. if the current temperature drops below the requested temperature = ignition is necessary. The quicker and timelier intervention, the better the operation and quicker the charging of the accumulation tank will be.

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5.3.7.3 BUFFER Menu / par. 14 – Minimum tank SET-POINT in operation

Function The entered value determines the minimum requirement (SET-POINT) for the tank at which charging with the automatic boiler (burner) is activated. The burner is then deactivated when at least this value is met at the bottom sensor of the accumulation tank - KSPF (FPF).
If during operation the set value is overridden by a higher requirement (SET-POINT) from the MC or DHW circuits, the higher value is naturally considered.
If the tank is not in operation (there is no SET-POINT for the tank from the heating circuits), the SET-POINT of the tank will be equal to the value of par. 1 - PFmin and the tank may be discharged o the minimum value.
In a hydraulic system with a solid fuel boiler (with manual loading) the setting of this parameter does not make any sense.

Function example minimum tank temperature (par.1) = 40°C
minimum SET-POINT (par.14) = **50°C**
SET-POINT of MIX ½ = current flow temperature to the MC is 40°C + MIXpar.14 = 44°C
SET-POINT of DHW = required temperature of the DHW tank 60°C + DHWpar.9 = 65°C

Condition 1: Only the heating circuits are in operation, DHW is charged: **the tank is in operation**
The highest SET-POINT value is 50°C, the burner is activated at the drop of the top sensor of the accumulation tank (PF) below 50°C and the burner is switched off when this temperature is exceeded at the bottom sensor of the accumulation tank (KSPF or FPF)

Condition 2: The heating circuits and DHW tank are in operation: **the tank is in operation**
The highest SET-POINT value is 65°C, the burner is activated at the drop of the top sensor of the accumulation tank (PF) below 65°C and the burner is switched off when this temperature is exceeded at the bottom sensor of the accumulation tank (KSPF or FPF)

Condition 3: The heating circuits are off, the DHW tank is charged: **the tank is not in operation**
As there is **no requirement** for the tank = **the tank is not in operation,** the minimum SET-POINT need not be met and the tank temperature will be maintained on a value s as not to drop below par.1, i.e. if the temperature at the top sensor of the tank (PF) is lower, the burner will be switched on and when this value is achieved at the bottom sensor of the tank - KSPF (FPF), the burner will be switched off.

Default setting depending on the hydraulic example

Setting range OFF – the required temperature in the tank is dynamic - it is automatically calculated from the current requirement of the system (DHW and MC). This value is usually used with solid fuel boilers with manual ignition where no set value has any influence.

5…100°C – the minimum entered value activates the automatic source at a drop by 3K. It is used e.g. in an application with an inserted DHW heater (floating heater or exchanger), or with EHP, where a minimum temperature must be maintained, or the minimum initial temperature is maintained in the tank to accelerate the subsequent startup of the heating system.

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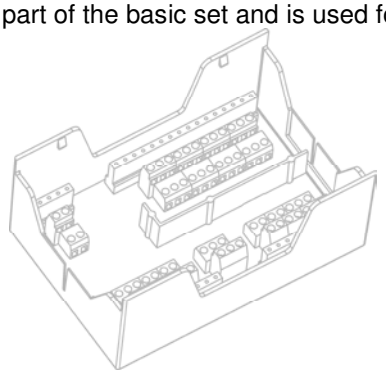
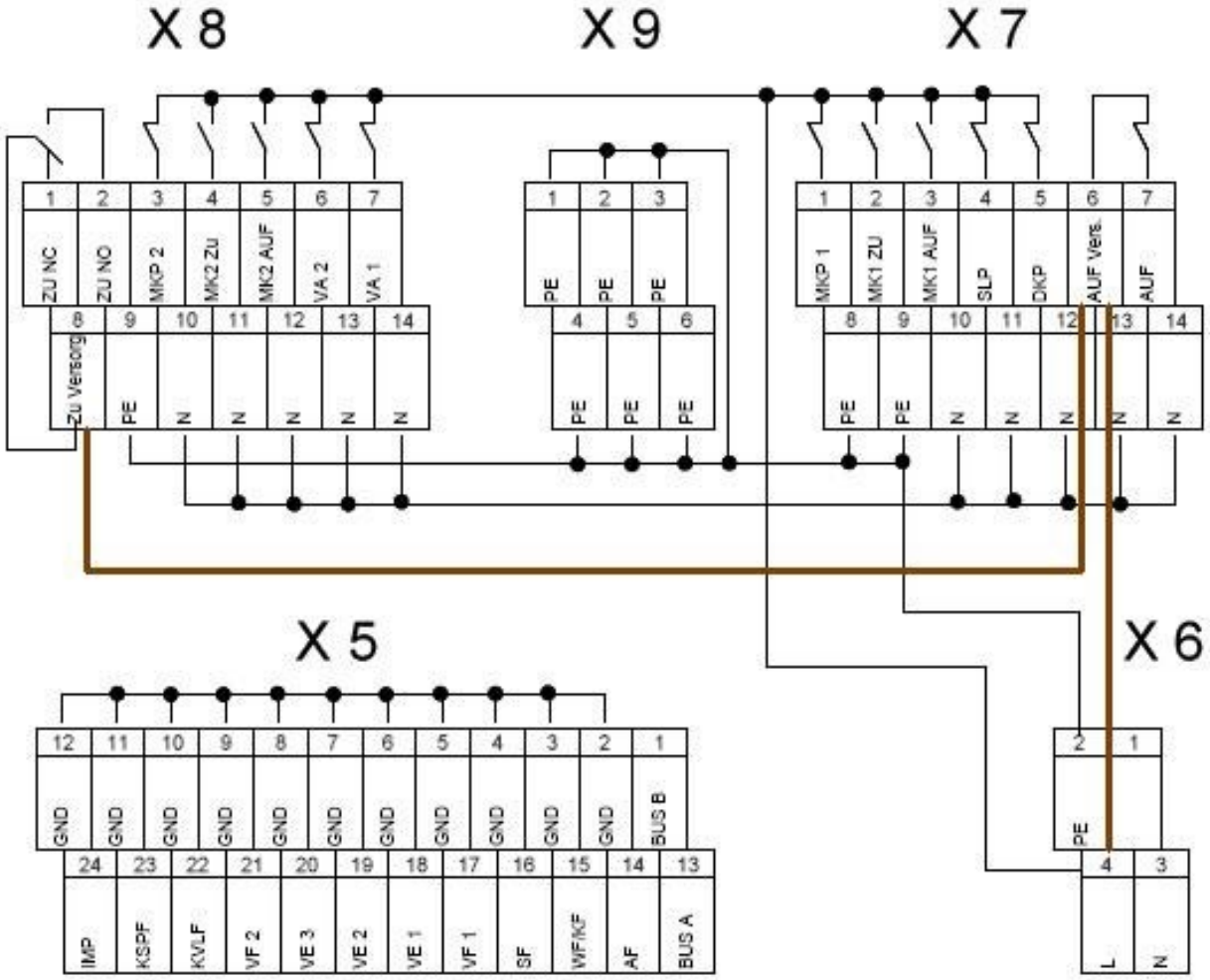
6 INSTALLATION

6.1 SCS12 connection terminal board

- The SC12 terminal board is part of the basic set and is used for the installation into the boiler panel.



6.1.1 Interconnection diagram of the SCS12 terminal board



NOTE:

If a boiler of type **2,3,4,5** or **6** (boiler controlled by the controller) is connected and the boiler **does not have** a prepared conductor in its own electric harness (generally marked as **L-IN**) for the terminal X7:6, the terminal board must be complemented with an interconnection terminal **X6:4** / **X7:6** as the contact **X7:6** / **X7:7 is not supplied by the terminal board**, but only controlled.

Valid for boilers of the GSE type only - they must be supplemented with the interconnection terminal **X7:6** / **X8:8** for the control of the boiler servo flap.

6.1.2 Description of interconnection of the SCS12 terminal board

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	Name	Description	Note	Conductor colour	Terminal board: position
Inputs, sensors	AF	Outdoor sensor	Outdoor temperature sensor	br	X5 : 2
				bl	X5 : 14
	WF	Boiler sensor	Boiler water temperature sensor	br	X5 : 3
				bl	X5 : 15
	SF	DHW sensor	Combined heater sensor if DHW is controlled	br	X5 : 4
				bl	X5 : 16
	VF1	Heating circuit 1	Heating circuit 1 sensor	br	X5 : 5
				bl	X5 : 17
	VE1	Variable input 1	E.g. AGF hydr. example 17, 19 and 20, sensor, switching contact, modem, alarm input, etc.	r	X5 : 6
				w	X5 : 18
	VE2	Variable input 2	E.g. PF hydr. example 4, 12 and 20, sensor, switching contact, modem, alarm input, etc.	br	X5 : 7
				bl	X5 : 19
	VE3	Variable input 3	E.g. PF hydr. example 3, 10 and 19, sensor, switching contact, modem, alarm input, etc.	br	X5 : 8
				bl	X5 : 20
	VF2	Heating circuit 2	Heating circuit 2 sensor	br	X5 : 9
				bl	X5 : 21
	KVLF	Solar panel	Solar panel sensor	br	X5 : 10
				bl	X5 : 22
	KSPF	Accum. tank bottom	Tank bottom sensor of an automatic source of heat (solar, pellets, etc.)	br	X5 : 11
				bl	X5 : 23
	IMP	Impulse input	Connection of a flow meter, counter, etc.	br	X5 : 12
				bl	X5 : 24
	BUS A,B	Data bus	Data input connection, e.g. from SDW 10, 20, another controller, etc.	A	X5 : 13
				B	X5 : 1

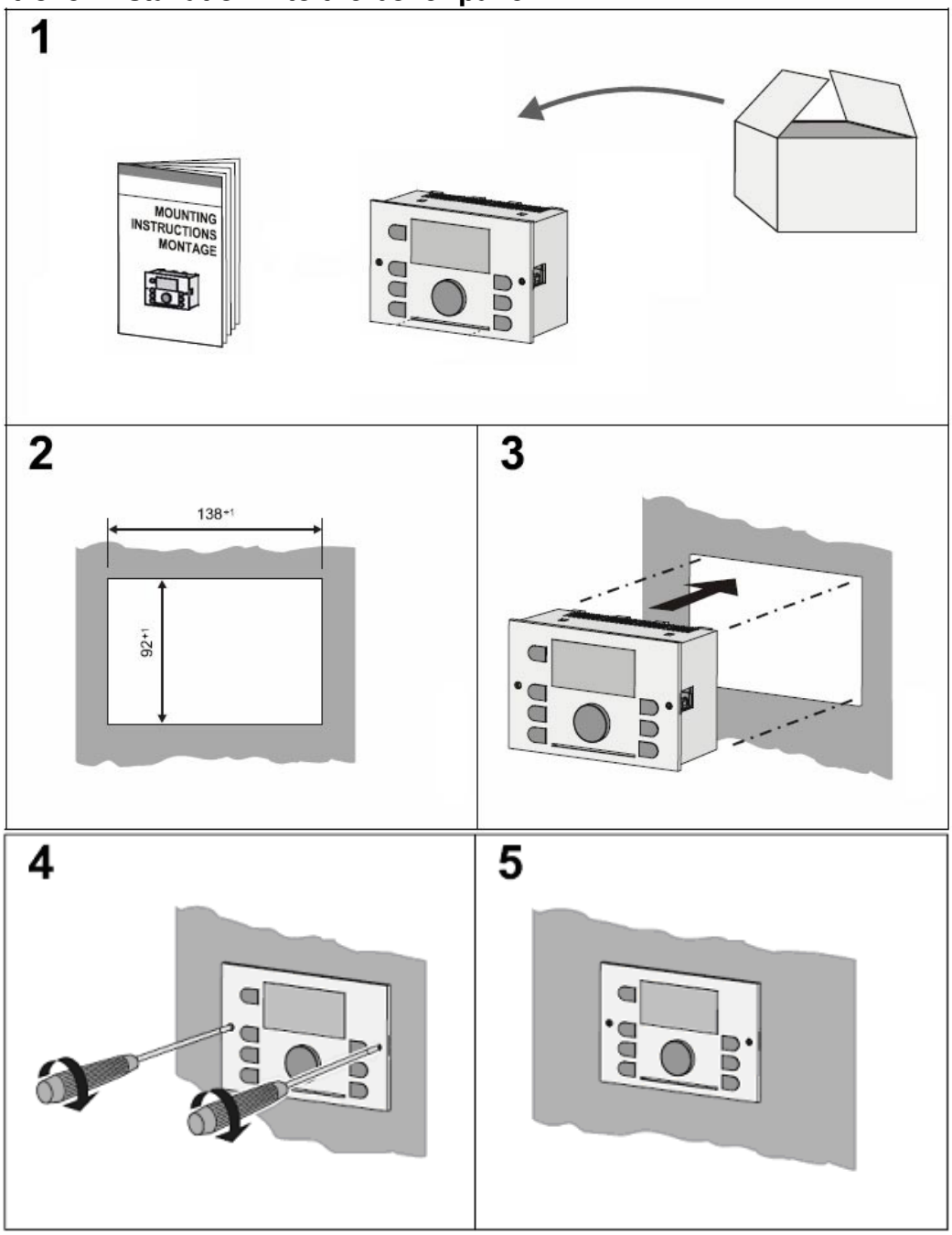
	Name	Description	Note	Conductor colour	Terminal board: position
Outputs, devices	230V/50Hz	Power supply	Main power supply of the controller from which controlled appliances are supplied	br (b)	X6 : 4
				bl	X6 : 3
				gy	X6 : 2
	Terminal*	Controlled boiler	Phase interconnection if a fan or boiler burner is controlled	br (b)	X6 : 4 - X7 : 6
		GSE boiler only	Phase interconnection if a boiler GSE exhaust flap is controlled	br (b)	X7 : 6 - X8 : 8
	FAN / burner L2	Fan / burner L2	Fan control of a boiler of type 2-6 /// burner control of a boiler of type 2, 3	br (b)	X7 : 7
				bl	X7 : 14
				gy	X7 : 9
	DKP	Boiler pump	Boiler circuit pump (Laddomat 21, etc.)	br (b)	X7 : 5
				m	X7 : 13
				gy	X7 : 8
	SLP	DHW pump	DHW charging pump, DHW charging servo valve, etc.	br (b)	X7 : 4
				bl	X7 : 12
				gy	X9 : 6
	MK1	MC1 servo drive	opens	b	X7 : 3
			closes	br	X7 : 2
			working neutral	bl	X7 : 11
	MKP1	Circuit 1 pump	System circuit pump (MC1)	br (b)	X7 : 1
				bl	X7 : 10
				gy	X9 : 5
	VA1	Variable output 1	E.g. burner of a boiler of type 5 and 6, solar pump, DHW circ. pump, DHW electric coil, etc.	br (b)	X8 : 7
				bl	X8 : 14
				gy	X9 : 1
	VA2	Variable output 2	E.g. zone valve in hydr. example 4 and 20	br (b)	X8 : 6
				bl	X8 : 13
				gy	X9 : 4
	MK2	MC2 servo drive	opens	b	X8 : 5
			closes	br	X8 : 4
			working neutral	bl	X8 : 12
	MKP2	Circuit 2 pump	System circuit pump (MC2)	br (b)	X8 : 3
				bl	X8 : 11
				gy	X8 : 9
	SERVO GSE	GSE exhaust flap	Conductor 1 - opens	br	X8 : 8
			Conductor 2 - closes	w	X8 : 2
			Conductor 3 - working neutral	bl	X8 : 10

Legend: Phase L - (b) black, (br) brown, working neutral N - (bl) blue, PE - (gy) green and yellow, (r) - red, (w) - white

Note
- If you need to extend conductors, observe valid electrical assembly standards, colours and marking of conductors
- Working neutral terminals N are connected in the terminal board, if necessary you can place the respective conductor on another terminal.
  Connected N terminals - X6:3; X7:10- X7:14; X8:10 - X8:14 (see electric diagram of the terminal board)
- Grounding terminals PE are connected in the terminal board, if necessary you can place the respective conductor on another terminal.
  Connected PE terminals - X6:2; X7:8 - X7:9; X8:9; X9:1 - X9:6 (see electric diagram of the terminal board)

*** Only if the supply conductor to X7:6 (usually marked L-IN) is not part of the el. harness of the boiler**

6.1.3 Controller installation into the boiler panel



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6.2 Description of SWS12 terminal board interconnection

X5	
No.	Designat.
1	T2B B
2	GND
3	GND
4	GND
5	GND
6	GND
7	GND
8	GND
9	GND
10	GND
11	GND
12	GND

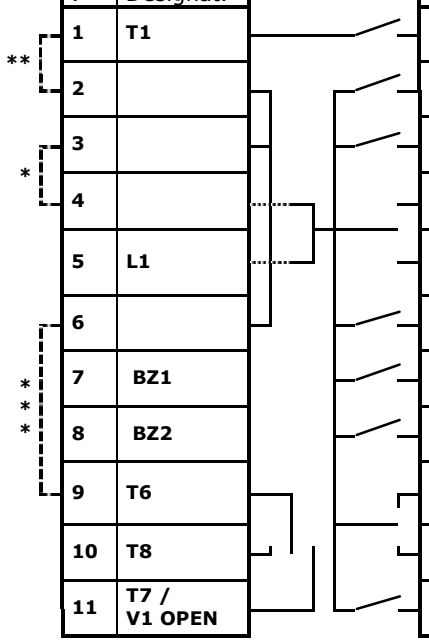
X6	
No.	Designat.
1	T2B A
2	AF
3	WF/KF
4	SF
5	VF1
6	VE1
7	VE2
8	VE3
9	VF2
10	KVLF
11	KSPF
12	IMP

X7	
No.	Designat.
1	T1
2	
3	
4	
5	L1
6	
7	BZ1
8	BZ2
9	T6
10	T8
11	T7 / V1 OPEN

X8	
No.	Designat.
1	T2 / V1 CLOSE
2	DKP
3	SLP
4	MK 1 OPEN
5	MK 1 CLOSE
6	MKP1
7	VA1
8	VA2
9	MK 2 OPEN
10	MK 2 CLOSE
11	MKP2

X9	
No.	Designat.
1	N
2	N
3	N
4	N
5	N
6	N
7	N
8	N
9	N
10	N
11	N
12	N
13	N

X10	
No.	Designat.
1	PE
2	PE
3	PE
4	PE
5	PE
6	PE
7	PE
8	PE
9	PE
10	PE
11	PE
12	PE
13	PE



* **Terminal for control of ATMOS boilers (boiler type 2, 3 and 4)**

** **Terminal for control of fan of boilers 2-6 / burner of boilers 2, 3**

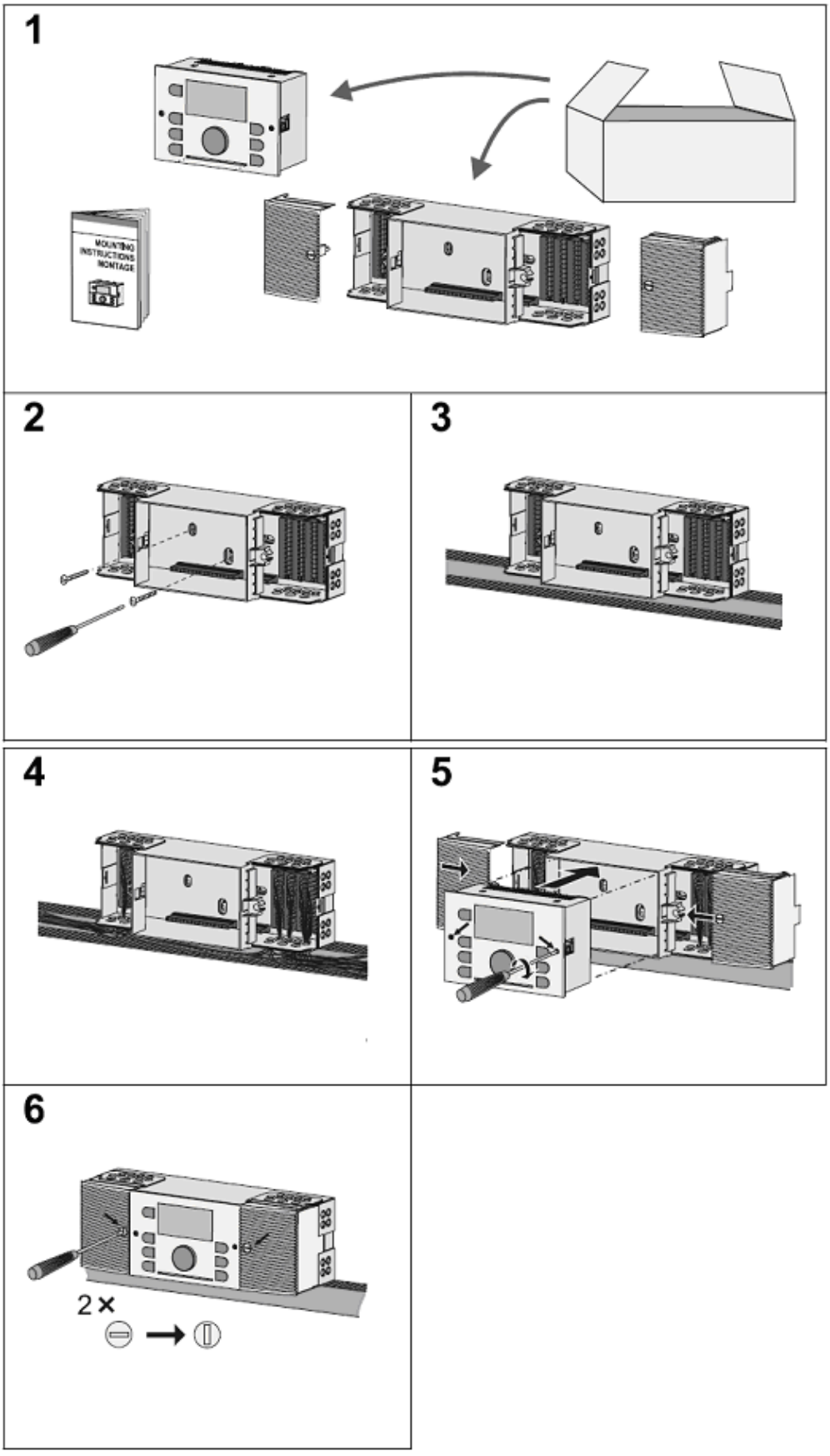
!!! - Valid only if the supply conductor to X7:6 (usually marked L-IN) is not part of the el. harness of the boiler

**

* **Terminal for control of an air servo flap of ATMOS GSE boilers**

ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
T2B A	BUS A	T7	ATMOS GSE, GSX BOILER EXHAUST FLAP
T2B B	BUS B	T8	HEATER RELAY OUTPUT - 2-STAGE
AF	OUTDOOR SENSOR	DKP	BOILER CIRCUIT PUMP
WF/KF	BOILER WATER TEMPERATURE SENSOR	SLP	DHW PUMP
SF	DHW SENSOR	MKP1	MC1 PUMP
VF1	MC1 SENSOR	MK 1 OPEN	CIRCUIT 1 MIXING VALVE OPENS
VE1	VARIABLE INPUT 1	MK 1 CLOSE	CIRCUIT 1 MIXING VALVE CLOSES
VE2	VARIABLE INPUT 2	VA1	VARIABLE OUTPUT 1 (BURNER OF BOILER TYPE 5,6)
VE3	VARIABLE INPUT 3	VA2	VARIABLE OUTPUT 2
VF2	MC2 SENSOR	MKP2	MC2 PUMP
KVLF	SOLAR PANEL SENSOR	MK 2 OPEN	CIRCUIT 2 MIXING VALVE OPENS
KSPF	- BOTTOM SOLAR TANK SENSOR - BOTTOM SENSOR OF ACC. TANK OF BOILER TYPE 3, 6	MK 2 CLOSE	CIRCUIT 2 MIXING VALVE CLOSES
IMP	IMPULSE input	GND	GROUNDING OF SENSORS
T1	INPUT FOR RELAY OF: - FAN OF BOILER 2-6 - BURNER OF BOILER 2,3	N	WORKING NEUTRAL
T2	- FAN OF BOILER 2-6 - BURNER OF BOILER 2,3	L1	230V - POWER SUPPLY
T6	INPUT FOR RELAY OF ATMOS GSE, GSX BOILER EXHAUST FLAP	PE	GROUNDING (FOR PUMPS, SERVO DRIVES, ETC.)
BZ1,BZ2	OPERATION HOUR COUNTER	WE-BUS A,B	not used

6.2.1 Controller installation into the SWS212 terminal board



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7 Examples of controller connections and settings

7.1 Terminal board connection example - hydraulic diagram no. 0031

	Name	Description	Note	Cond. colour	SCS12	SWS12
Inputs, sensors	AF	Outdoor sensor	Outdoor temperature sensor	h	X5 : 2	X5 : 2
				m	X5 : 14	X6 : 2
	WF	Boiler sensor	Boiler water temperature sensor	h	X5 : 3	X5 : 3
				m	X5 : 15	X6 : 3
	SF	DHW sensor	Combined heater sensor if DHW is controlled	h	X5 : 4	X5 : 4
				m	X5 : 16	X6 : 4
	VF1	Heating circuit 1	Heating circuit 1 sensor	h	X5 : 5	X5 : 5
				m	X5 : 17	X6 : 5
	VE1	Variable input 1	Flue gas sensor (AGF)	červ	X5 : 6	X5 : 6
				b	X5 : 18	X6 : 6
	VE2	Variable input 2	Temp. sensor, switching contact, modem, alarm input, etc.	h	X5 : 7	X5 : 7
				m	X5 : 19	X6 : 7
	VE3	Variable input 3	Temp. sensor, switching contact, modem, alarm input, etc.	h	X5 : 8	X5 : 8
				m	X5 : 20	X6 : 8
	VF2	Heating circuit 2	Heating circuit 2 sensor	h	X5 : 9	X5 : 9
				m	X5 : 21	X6 : 9
	KVLF	Solar panel	Solar panel sensor	h	X5 : 10	X5 : 10
				m	X5 : 22	X6 : 10
	KSPF	Accum. tank bottom	DHW tank bottom sensor for the solar system	h	X5 : 11	X5 : 11
				m	X5 : 23	X6 : 11
	IMP	Impulse input	Connection of a flow meter, counter, etc.	h	X5 : 12	X5 : 12
				m	X5 : 24	X6 : 12
	BUS A,B	Data bus	Data input connection, e.g. from SDW 10, 20, another controller, etc.	A	X5 : 13	X5 : 1
				B	X5 : 1	X6 : 1

	Name	Description	Note	Cond. colour	SCS12	SWS12
Outputs, devices	230V/50Hz	Power supply	Main power supply of the controller from which controlled appliances are supplied	h (č)	X6 : 4	X7 : 5
				m	X6 : 3	X9 : 5
				zž	X6 : 2	X10 : 5
	Terminal *	Boiler type 4	Power supply of the boiler fan contact	h (č)	X6:4 - X7:6	X7:1 - X7:2
		Boiler type 4	Only if GSE boiler exhaust flap is controlled	h (č)	X7:6 - X8:8	X7:6 - X7:9
	FAN	Fan	Controlled fan contact	h (č)	X7 : 7	X8 : 1
				m	X7 : 14	X9 : 1
				zž	X7 : 9	X10 : 1
	DKP	Boiler pump	Boiler circuit pump (Laddomat 21, etc.)	h (č)	X7 : 5	X8 : 2
				m	X7 : 13	X9 : 2
				zž	X7 : 8	X10 : 2
	SLP	DHW pump	DHW charging pump (SLP), DHW charging servo valve (SLP) DHW electric heating (ETUV), DHW circulation pump (ZKP), etc.	h (č)	X7 : 4	X8 : 3
				m	X7 : 12	X9 : 3
				zž	X9 : 6	X10 : 3
	MK1	MC1 servo drive	opens	č	X7 : 3	X8 : 4
			closes	h	X7 : 2	X8 : 5
			working neutral	m	X7 : 11	X9 : 4
	MKP1	Circuit 1 pump	System circuit pump (MC1)	h (č)	X7 : 1	X8 : 6
				m	X7 : 10	X9 : 6
				zž	X9 : 5	X10 : 6
	VA1	Variable output 1	Control phase L2 of boiler burner (L2-OUT)	h (č)	X8 : 7	X8 : 7
				m	X8 : 14	X9 : 7
				zž	X9 : 1	X10 : 7
	VA2	Variable output 2	E.g. circulation pump (ZKP), solar pump (SOP), etc.	h (č)	X8 : 6	X8 : 8
				m	X8 : 13	X9 : 8
				zž	X9 : 4	X10 : 8
	MK2	MC2 servo drive	opens	č	X8 : 5	X8 : 9
			closes	h	X8 : 4	X8 : 10
			working neutral	m	X8 : 12	X9 : 9
	MKP2	Circuit 2 pump	System circuit pump (MC2)	h (č)	X8 : 3	X8 : 11
				m	X8 : 11	X9 : 11
				zž	X8 : 9	X10 : 11
	SERVO GSE	GSE exhaust flap	Conductor 1 - opens	h	X8 : 8	X7 : 9
			Conductor 2 - closes	b	X8 : 2	X7 : 11
			Conductor 3 - working neutral	m	X8 : 10	X9 : 10

Legend : Phase L - (**č**) black, (**h**) brown, working neutral N - (**m**) blue, PE - (**zž**) green and yellow, (**červ**) - red, (**b**) - white

Notes - If you need to extend conductors, observe valid electrical assembly standards, colours and marking of conductors

- Working neutral terminals N are connected in the terminal board, if necessary you can place the respective conductor on another terminal.
Connected N terminals N - X6:3; X7:10- X7:14; X8:10 - X8:14 (see el. diagram of the terminal board)

- Grounding terminals PE are connected in the terminal board, if necessary you can place the respective conductor on another terminal.
Connected PE terminals - X6:2; X7:8 - X7:9; X8:9; X9:1 - X9:6 (see el. diagram of the terminal board)

* Only if the supply conductor to X7:6 (usually marked L-IN) is not part of the cable harness of the boiler

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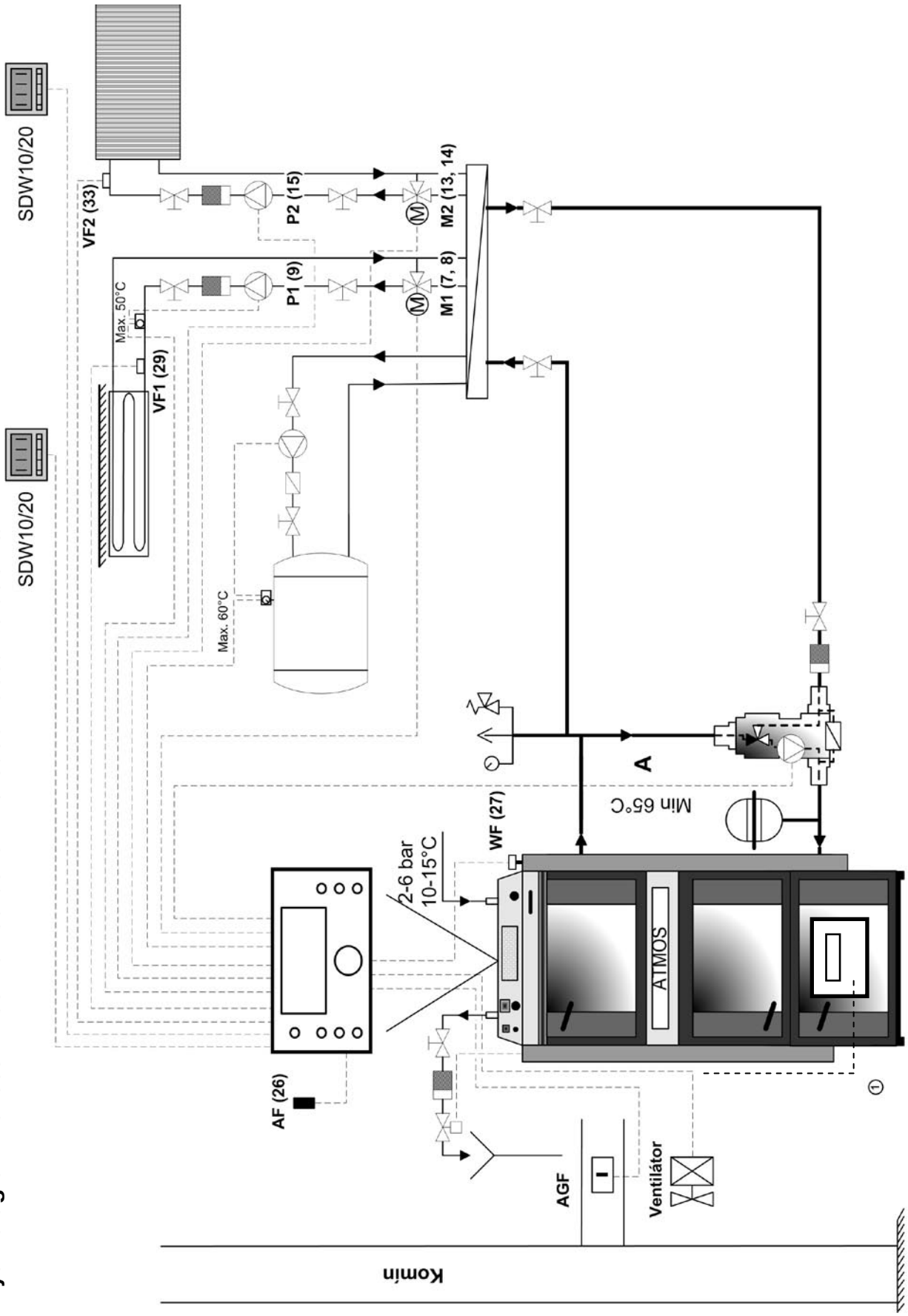
7.1.1 Hydr. diagram no. 0031 – combined boiler without an accumulation tank



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7.1.2 Example of parameter settings for hydraulic diagram no. 0031

HYDRAULIC Menu

Parameter	Description	Setting
1	Hydraulic diagram	0031
2	DHW pump output	1 (DHW charging pump)
3	Output of mixing circuit 1	3 (Mixing circuit)
4	Output of mixing circuit 2	3 (Mixing circuit)
5	Output of the heating circuit (HC) pump	DKP (fixed)
6	Variable output 1	L2 Boiler burner (fixed)
7	Variable output 2	OFF
8	Variable input 1	16 (AGF) flue gas sensor
9	Variable input 2	OFF
10	Variable input 3	OFF

SOLID FUEL Menu

1	Boiler type	5
2	Minimum temperature (boiler type 2,3,4)	80℃
3	Maximum temperature (boiler type 2,3,4)	95℃
4	Switch-on of the boiler pump (DKP)	70℃
5	Boiler pump differential	5K
7	Switch-on differential of the fan	3K
17	Switch-over of the boiler pump to WF/AGF	2 (AGF)
18	Minimum flue gas temperature	60℃
20	Protection of the circulation pump of the boiler on switch-on	ON

SOURCE Menu

1	Automatic switch over after burning out of SRC-1	1 (SRC-2)
2	One-off cycle of SRC-2	OFF
12	Name of SRC-1	WOOD
13	Name of SRC-2	PELET

7.2 Terminal board connection example - hydraulic diagram no. 0032

	Name	Description	Note	Cond. colour	SCS12	SWS12
Inputs, sensors	AF	Outdoor sensor	Outdoor temperature sensor	h	X5 : 2	X5 : 2
				m	X5 : 14	X6 : 2
	WF	Boiler sensor	Boiler water temperature sensor	h	X5 : 3	X5 : 3
				m	X5 : 15	X6 : 3
	SF	DHW sensor	Combined heater sensor if DHW is controlled	h	X5 : 4	X5 : 4
				m	X5 : 16	X6 : 4
	VF1	Heating circuit 1	Heating circuit 1 sensor	h	X5 : 5	X5 : 5
				m	X5 : 17	X6 : 5
	VE1	Variable input 1	Flue gas sensor (AGF)	červ	X5 : 6	X5 : 6
				b	X5 : 18	X6 : 6
	VE2	Variable input 2	Temperature sensor, switch-on contact, modem, alarm input, etc.	h	X5 : 7	X5 : 7
				m	X5 : 19	X6 : 7
	VE3	Variable input 3	Top sensor of the accumulation tank (PF)	h	X5 : 8	X5 : 8
				m	X5 : 20	X6 : 8
	VF2	Heating circuit 2	Heating circuit 2 sensor	h	X5 : 9	X5 : 9
				m	X5 : 21	X6 : 9
	KVLF	Solar panel	Solar panel sensor	h	X5 : 10	X5 : 10
				m	X5 : 22	X6 : 10
	KSPF	Accum. tank bottom	DHW tank bottom sensor for the solar system or boiler	h	X5 : 11	X5 : 11
				m	X5 : 23	X6 : 11
	IMP	Impulse input	Connection of a flow meter, counter, etc.	h	X5 : 12	X5 : 12
				m	X5 : 24	X6 : 12
	BUS A,B	Data bus	Data input connection, e.g. from SDW 10, 20, another controller, etc.	A	X5 : 13	X5 : 1
				B	X5 : 1	X6 : 1

	Name	Description	Note	Cond. colour	SCS12	SWS12
Outputs, devices	230V/50Hz	Power supply	Main power supply of the controller from which controlled appliances are supplied	h (č)	X6 : 4	X7 : 5
				m	X6 : 3	X9 : 5
				zž	X6 : 2	X10 : 5
	Terminal *	Boiler type 4	Power supply of the boiler fan contact	h (č)	X6:4 - X7:6	X7:1 - X7:2
		Boiler type 4	Only if GSE boiler exhaust flap is controlled	h (č)	X7:6 - X8:8	X7:6 - X7:9
	FAN	Fan	Controlled fan contact	h (č)	X7 : 7	X8 : 1
				m	X7 : 14	X9 : 1
				zž	X7 : 9	X10 : 1
	DKP	Boiler pump	Boiler circuit pump (Laddomat 21, etc.)	h (č)	X7 : 5	X8 : 2
				m	X7 : 13	X9 : 2
				zž	X7 : 8	X10 : 2
	SLP	DHW pump	DHW charging pump, servo valve of DHW charging supply, etc.	h (č)	X7 : 4	X8 : 3
				m	X7 : 12	X9 : 3
				zž	X9 : 6	X10 : 3
	MK1	MC1 servo drive	opens	č	X7 : 3	X8 : 4
			closes	h	X7 : 2	X8 : 5
			working neutral	m	X7 : 11	X9 : 4
	MKP1	Circuit 1 pump	System circuit pump (MC1)	h (č)	X7 : 1	X8 : 6
				m	X7 : 10	X9 : 6
				zž	X9 : 5	X10 : 6
	VA1	Variable output 1	Control phase L2 of boiler burner (L2-OUT)	h (č)	X8 : 7	X8 : 7
				m	X8 : 14	X9 : 7
				zž	X9 : 1	X10 : 7
	VA2	Variable output 2	E.g. circulation pump (ZKP), solar pump (SOP), etc.	h (č)	X8 : 6	X8 : 8
				m	X8 : 13	X9 : 8
				zž	X9 : 4	X10 : 8
	MK2	MC2 servo drive	opens	č	X8 : 5	X8 : 9
			closes	h	X8 : 4	X8 : 10
			working neutral	m	X8 : 12	X9 : 9
	MKP2	Circuit 2 pump	System circuit pump (MC2)	h (č)	X8 : 3	X8 : 11
				m	X8 : 11	X9 : 11
				zž	X8 : 9	X10 : 11
	SERVO GSE	GSE exhaust flap	Conductor 1 - opens	h	X8 : 8	X7 : 9
			Conductor 2 - closes	b	X8 : 2	X7 : 11
			Conductor 3 - working neutral	m	X8 : 10	X9 : 10

Legend : Phase L - (č) black, (h) brown, working neutral N - (m) blue, PE - (zž) green and yellow, (červ) - red, (b) - white

Notes
- If you need to extend conductors, observe valid electrical assembly standards, colours and marking of conductors
- Working neutral terminals N are connected in the terminal board, if necessary you can place the respective conductor on another terminal.
  Connected N terminals N - X6:3; X7:10- X7:14; X8:10 - X8:14 (see el. diagram of the terminal board)
- Grounding terminals PE are connected in the terminal board, if necessary you can place the respective conductor on another terminal.
  Connected PE terminals - X6:2; X7:8 - X7:9; X8:9; X9:1 - X9:6 (see el. diagram of the terminal board)

* Only if the supply conductor to X7:6 (usually marked L-IN) is not part of the cable harness of the boiler

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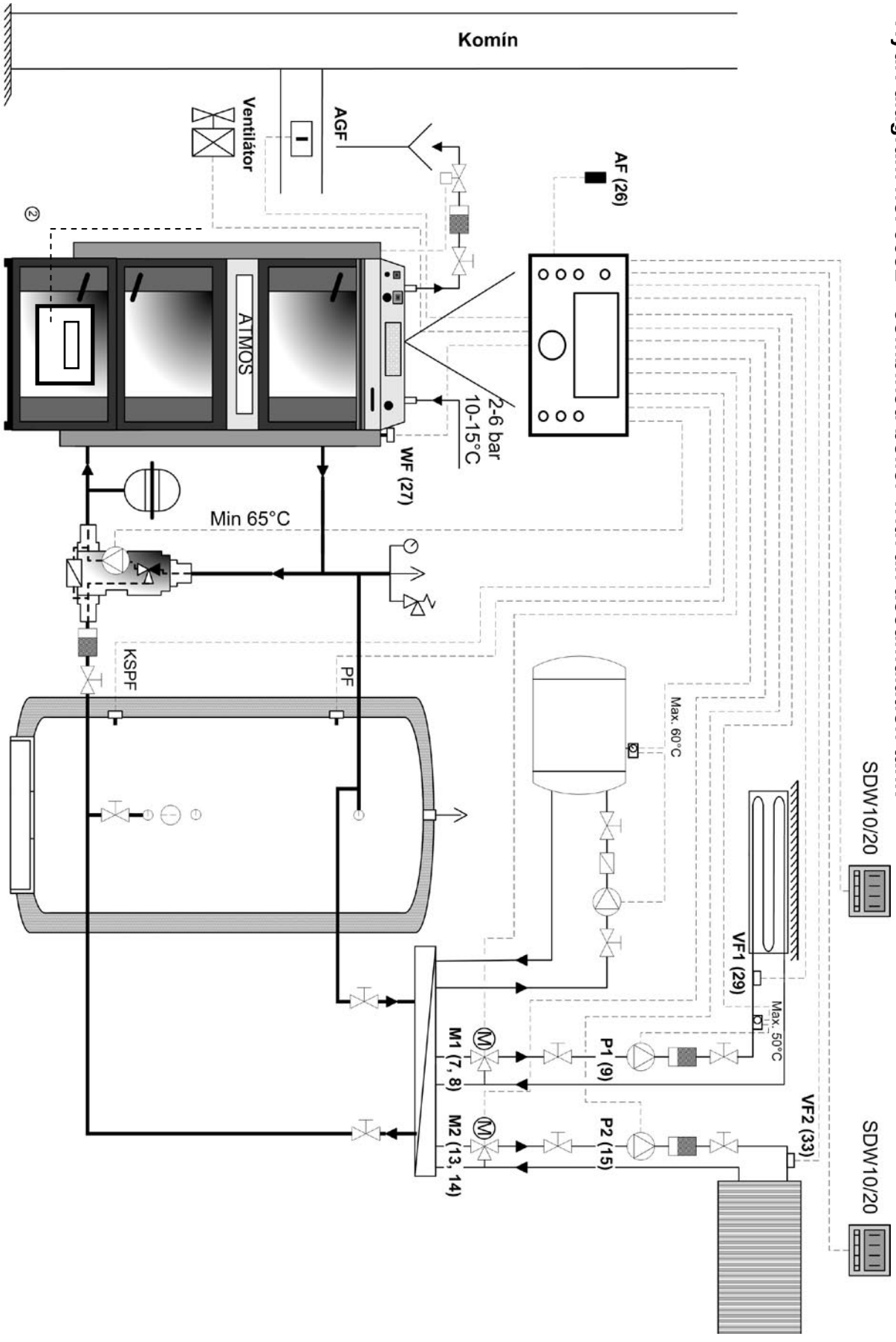
7.2.1 Hydr. diagram no. 0032 – combined boiler with an accumulation tank



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7.2.2 Example of parameter settings for hydraulic diagram no. 0032

HYDRAULIC Menu

Parameter	Description	Setting
1	Hydraulic diagram	0032
2	DHW pump output	1 (DHW charging pump)
3	Output of mixing circuit 1	3 (Mixing circuit)
4	Output of mixing circuit 2	3 (Mixing circuit)
5	Output of the heating circuit (HC) pump	DKP (fixed)
6	Variable output 1	L2 Boiler burner (fixed)
7	Variable output 2	OFF
8	Variable input 1	16 (AGF) Flue gas sensor
9	Variable input 2	OFF
10	Variable input 3	19 (PF) Top tank sensor

SOLID FUEL Menu

1	Boiler type	6
2	Minimum temperature (boiler type 2,3,4)	80°C
3	Maximum temperature (boiler type 2,3,4)	95°C
4	Switch-on of the boiler pump (DKP)	30°C
5	Boiler pump differential	5K
7	Switch-on differential of the fan	3K
16	Forced losses of heater	3 - buffer
17	Switch-over of the boiler pump to WF/AGF	2 (AGF)
18	Minimum flue gas temperature	60°C
20	Protection of the circulation pump of the boiler on switch-on	OFF

BUFFER Menu

1	Minimum temperature - release of heating circuits	40°C
2	Maximum temperature	105°C
9	Charging protection	ON
14	Min. required tank temperature (min. SET-POINT)	60°C
15	DKP switching differential (between the tank and boiler)	-3 K
16	Differential of DKP restart	0 K

SOURCES Menu

1	Automatic switch over after burning out of SRC-1	1 (SRC-2)
2	One-off cycle of SRC-2	OFF
12	Name of SRC-1	WOOD
13	Name of SRC-2	PELET

GB

7.3 Terminal board connection example - hydraulic diagram no. 0033

	Name	Description	Note	Cond. colour	SCS12	SWS12
Inputs, sensors	AF	Outdoor sensor	Outdoor temperature sensor	h	X5 : 2	X5 : 2
				m	X5 : 14	X6 : 2
	WF	Boiler sensor	Boiler water temperature sensor	h	X5 : 3	X5 : 3
				m	X5 : 15	X6 : 3
	SF	DHW sensor	Combined heater sensor if DHW is controlled	h	X5 : 4	X5 : 4
				m	X5 : 16	X6 : 4
	VF1	Heating circuit 1	Heating circuit 1 sensor	h	X5 : 5	X5 : 5
				m	X5 : 17	X6 : 5
	VE1	Variable input 1	Flue gas sensor (AGF)	červ	X5 : 6	X5 : 6
				b	X5 : 18	X6 : 6
	VE2	Variable input 2	Temperature sensor, switch-on contact, modem, alarm input, etc.	h	X5 : 7	X5 : 7
				m	X5 : 19	X6 : 7
	VE3	Variable input 3	Top sensor of the accumulation tank (PF)	h	X5 : 8	X5 : 8
				m	X5 : 20	X6 : 8
	VF2	Heating circuit 2	Heating circuit 2 sensor	h	X5 : 9	X5 : 9
				m	X5 : 21	X6 : 9
	KVLF	Solar panel	Solar panel sensor	h	X5 : 10	X5 : 10
				m	X5 : 22	X6 : 10
	KSPF	Accum. tank bottom	DHW tank bottom sensor for the solar system	h	X5 : 11	X5 : 11
				m	X5 : 23	X6 : 11
	IMP	Impulse input	Connection of a flow meter, counter, etc.	h	X5 : 12	X5 : 12
				m	X5 : 24	X6 : 12
	BUS A,B	Data bus	Data input connection, e.g. from SDW 10, 20, another controller, etc.	A	X5 : 13	X5 : 1
				B	X5 : 1	X6 : 1

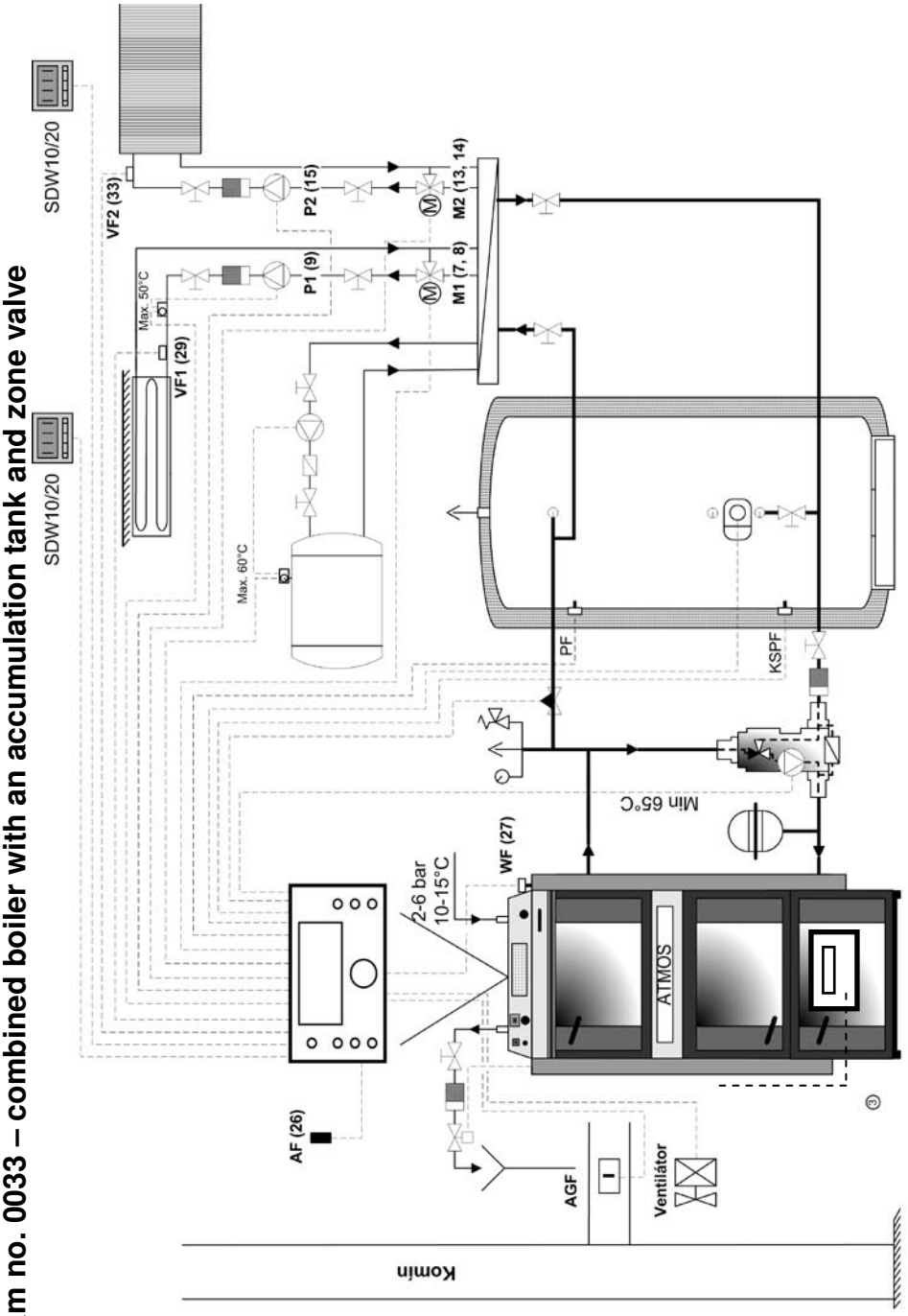
	Name	Description	Note	Cond. colour	SCS12	SWS12
Outputs, devices	230V/50Hz	Power supply	Main power supply of the controller from which controlled appliances are supplied	h (č)	X6 : 4	X7 : 5
				m	X6 : 3	X9 : 5
				zž	X6 : 2	X10 : 5
	Terminal *	Boiler type 4	Power supply of the boiler fan contact	h (č)	X6:4 - X7:6	X7:1 - X7:2
		Boiler type 4	Only if GSE boiler exhaust flap is controlled	h (č)	X7:6 - X8:8	X7:6 - X7:9
	FAN	Fan	Controlled fan contact	h (č)	X7 : 7	X8 : 1
				m	X7 : 14	X9 : 1
				zž	X7 : 9	X10 : 1
	DKP	Boiler pump	Boiler circuit pump (Laddomat 21, etc.)	h (č)	X7 : 5	X8 : 2
				m	X7 : 13	X9 : 2
				zž	X7 : 8	X10 : 2
	SLP	DHW pump	DHW charging pump (SLP), DHW charging supply servo valve (SLP), DHW circulation pump (ZKP), DHW electric heating (ETUV), etc.	h (č)	X7 : 4	X8 : 3
				m	X7 : 12	X9 : 3
				zž	X9 : 6	X10 : 3
	MK1	MC1 servo drive	opens	č	X7 : 3	X8 : 4
			closes	h	X7 : 2	X8 : 5
			working neutral	m	X7 : 11	X9 : 4
	MKP1	Circuit 1 pump	System circuit pump (MC1)	h (č)	X7 : 1	X8 : 6
				m	X7 : 10	X9 : 6
				zž	X9 : 5	X10 : 6
	VA1	Variable output 1	Control phase L2 of boiler burner (L2-OUT)	h (č)	X8 : 7	X8 : 7
				m	X8 : 14	X9 : 7
				zž	X9 : 1	X10 : 7
	VA2	Variable output 2	E.g. circulation pump (ZKP), solar pump (SOP), etc.	h (č)	X8 : 6	X8 : 8
				m	X8 : 13	X9 : 8
				zž	X9 : 4	X10 : 8
	MK2	MC2 servo drive	opens	č	X8 : 5	X8 : 9
			closes	h	X8 : 4	X8 : 10
			working neutral	m	X8 : 12	X9 : 9
	MKP2	Circuit 2 pump	System circuit pump (MC2)	h (č)	X8 : 3	X8 : 11
				m	X8 : 11	X9 : 11
				zž	X8 : 9	X10 : 11
	SERVO GSE	GSE exhaust flap	Conductor 1 - opens	h	X8 : 8	X7 : 9
			Conductor 2 - closes	b	X8 : 2	X7 : 11
			Conductor 3 - working neutral	m	X8 : 10	X9 : 10

Legend : Phase L - (**č**) black, (**h**) brown, working neutral N - (**m**) blue, PE - (**zž**) green and yellow, (**červ**) - red, (**b**) - white

Notes
- If you need to extend conductors, observe valid electrical assembly standards, colours and marking of conductors
- Working neutral terminals N are connected in the terminal board, if necessary you can place the respective conductor on another terminal.
  Connected N terminals N - X6:3; X7:10- X7:14; X8:10 - X8:14 (see el. diagram of the terminal board)
- Grounding terminals PE are connected in the terminal board, if necessary you can place the respective conductor on another terminal.
  Connected PE terminals - X6:2; X7:8 - X7:9; X8:9; X9:1 - X9:6 (see el. diagram of the terminal board)

* Only if the supply conductor to X7:6 (usually marked L-IN) is not part of the cable harness of the boiler

7.3.1 Hydr. diagram no. 0033 – combined boiler with an accumulation tank and zone valve



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7.3.2 Example of parameter settings for hydraulic diagram no. 0033

HYDRAULIC Menu

Parameter	Description	Setting
1	Hydraulic diagram	0033
2	DHW pump output	1 (DHW charging pump)
3	Output of mixing circuit 1	3 (Mixing circuit)
4	Output of mixing circuit 2	3 (Mixing circuit)
5	Output of the heating circuit (HC) pump	DKP (fixed)
6	Variable output 1	L2 Boiler burner (fixed)
7	Variable output 2	16 (PLP)
8	Variable input 1	16 (AGF) Flue gas sensor
9	Variable input 2	PF (fixed)
10	Variable input 3	OFF

Menu PEVNÁ PALIVA

1	Boiler type	6
2	Minimum temperature (boiler type 2,3,4)	80°C
3	Maximum temperature (boiler type 2,3,4)	95°C
4	Switch-on of the boiler pump (DKP)	30°C
5	Boiler pump differential	5K
7	Switch-on differential of the fan	3K
16	Forced losses of heater	3 - buffer
17	Switch-over of the boiler pump to WF/AGF	2 (AGF)
18	Minimum flue gas temperature	60°C
20	Protection of the circulation pump of the boiler on switch-on	OFF

BUFFER Menu

1	Minimum temperature - release of heating circuits	40°C
2	Maximum temperature	105°C
9	Charging protection	ON
14	Min. required tank temperature (min. SET-POINT)	60°C
15	DKP switching differential (between the tank and boiler)	-3 K
16	Differential of DKP restart	0 K

SOURCES Menu

1	Automatic switch over after burning out of SRC-1	1 (SRC-2)
2	One-off cycle of SRC-2	ON
12	Name of SRC-1	WOOD
13	Name of SRC-2	PELET

7.3.3 Abbreviations used in the documentation

ABS	Reduced mode	MKP	Mixed circuit pump
AF	Outdoor sensor	P1	Time program 1
AF 2	Outdoor sensor 2	P2	Time program 2
AGF	Flue gas temperature sensor	P3	Time program 3
AGK	Air flap	PF	Buffer sensor (top)
AGFmin	Minimum flue gas temperature	PF1	Buffer sensor 1 (top)
AT	Fixed buffer value (boiler type 3)	PF2	Buffer sensor 2 (bottom)
ATW-Temp.1	Flue gas temperature / Switching value for the exhaust flap	PFsoll	Fixed value of the buffer (boiler type 3)
ATW1 SD	Switching difference for the exhaust flap	PLP	Tank zone valve
ATW Temp.2	Flue gas temperature / Fan control	PLV	Tank valve
BR1	Status of burner 1	PWF	Parallel heating enabling
BRS/BRSP	External boiler: oil/gas boiler	RBP	Return supply pump
BCP	Boiler circulation pump	RED	Reduced mode
BS	Buffer sensor (top)	RG	Room unit
BS2	Buffer sensor (bottom)	RLF	Return pipeline pump
PLP	Buffer charging pump	SBUS	Buffer solar sensor
BUS	Data bus	SD I	Switch-over differential I
BZ1	Hour counter for burner 1	SD II	Switch-over differential II
BZ2	Hour counter for burner 2	SDaus	FSK switch-off differential
CC	Constant control	SDbr	Buffer switch-on differential (pellet or buffer mode)
CHP	Charging pump	SDein	FSK switch-on difference
CIR	Circulation pump	SDF	Fan switching differential
DHW	Domestic hot water	SDpein	Pump switch-on diff. (corresponds to KTpein)
DHWP	Hot water charging pump	SDplv	Buffer valve switch-over differential
DKP	Direct circuit pump	SF	Buffer sensor
ECO	Economic (reduced) mode	SFB	Solid fuel buffer sensor
EHP	Electric heating of accum. tank	SFD	Solar dispersion
ELH	DHW electric heating (summer mode only)	SFS	Solid fuel boiler sensor
ETUV	DHW electric heating (controlled)	SFP	Solid fuel charging pump
ERR	Sensor Malfunction	SLP	Buffer charging pump
FAN	Fan (ON/OFF)	SLV	Solar heating switch-over charging
FKF	Solid fuel boiler sensor	SLVF	Solar sensor of charging switch-over
FPF	Buffer sensor	SOP	Solar heating charging pump
FR	Constant flow temp. control	SPFS	Solar heating flow pump
FSK	Solid fuel boiler	SPRS	Solar heating return pipeline sensor
FSP	Charging pump	SSP	Laminar flow pump
HBR	Hydraulic buffer	Ta	Fan running time of a boiler with AGF
IMP	Pulse input	Tb	Hidden running time of 60 min. of a boiler fan with AGF (Start)
HK/HC	Heating circuit	VA/VO 1	Variable output 1
KKPF	Solid fuel boiler circulation pump	VA/VO 2	Variable output 2
KP	Boiler circulation pump	VE/VI 1	Variable input 1
KRLF	Solar sensor of return water	VE/VI 2	Variable input 2
KSPF	Solar sensor / bottom tank sensor	VE/VI 3	Variable input 3
KTmax	Maximum boiler temperature	VF1	Sensor of mixed circuit 1
KTmin	Minimum boiler temperature	VF2	Sensor of mixed circuit 2
KTpein	Boiler pump enabling	WEZ	General source of heat / Heater
KVLF	Solar sensor	WF/KF	Boiler temperature
MIMO	Mixing valve motor	ZKP	Circulation pump
MK/MIX	Mixed heating circuit	ZUP	Charging pump

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7.4 Description of the heating system and controller settings

- tick and fill your own configuration

	Arrangement	Without accum. tank	With accum. tank	With accum. tank and zone valve
Boiler type	1 - Non-controlled	**1**	**3**	**4**
	2 – Automatic	**9**	**10**	**12**
	4 – With an AGF flue gas sensor	**17**	**19**	**20**
	5, 6 - Combined	**31**	**32**	**33**
Circuits	TUV	**YES / NO**	**YES / NO**	**YES / NO**
	MIX-1	**YES / NO**	**YES / NO**	**YES / NO**
	MIX-2	**YES / NO**	**YES / NO**	**YES / NO**
Variable inputs	VI1	**……**	**AGF**	**AGF**
	VI2	**……**	**……**	**PF**
	VI3	**……**	**PF**	**……**
Variable outputs	VO1	**BURNER TYPE 5 /……**	**BURNER TYPE 6 /……**	**BURNER TYPE 6 /……**
	VO2	**……**	**……**	**Zone valve PLP**
SENSORS	KSPF	**bivalent DHW**	**HYDR.10,32 / SOLAR**	**HYDR.12,33 / SOLAR**
	KVLF	**bivalent DHW**	**SOLAR**	**SOLAR**
BUS	Room unit	**SDW 10 / 20 SDW 10 / 20**	**SDW 10 / 20 SDW 10 / 20**	**SDW 10 / 20 SDW 10 / 20**

7.5 Installation notes

PANTERASOFT

Warrantee

ATMOS

Sell-by date: .....

stamp and signature

UPGRADE ACD01_v3.0 na v3.3 - GB - 06/11

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